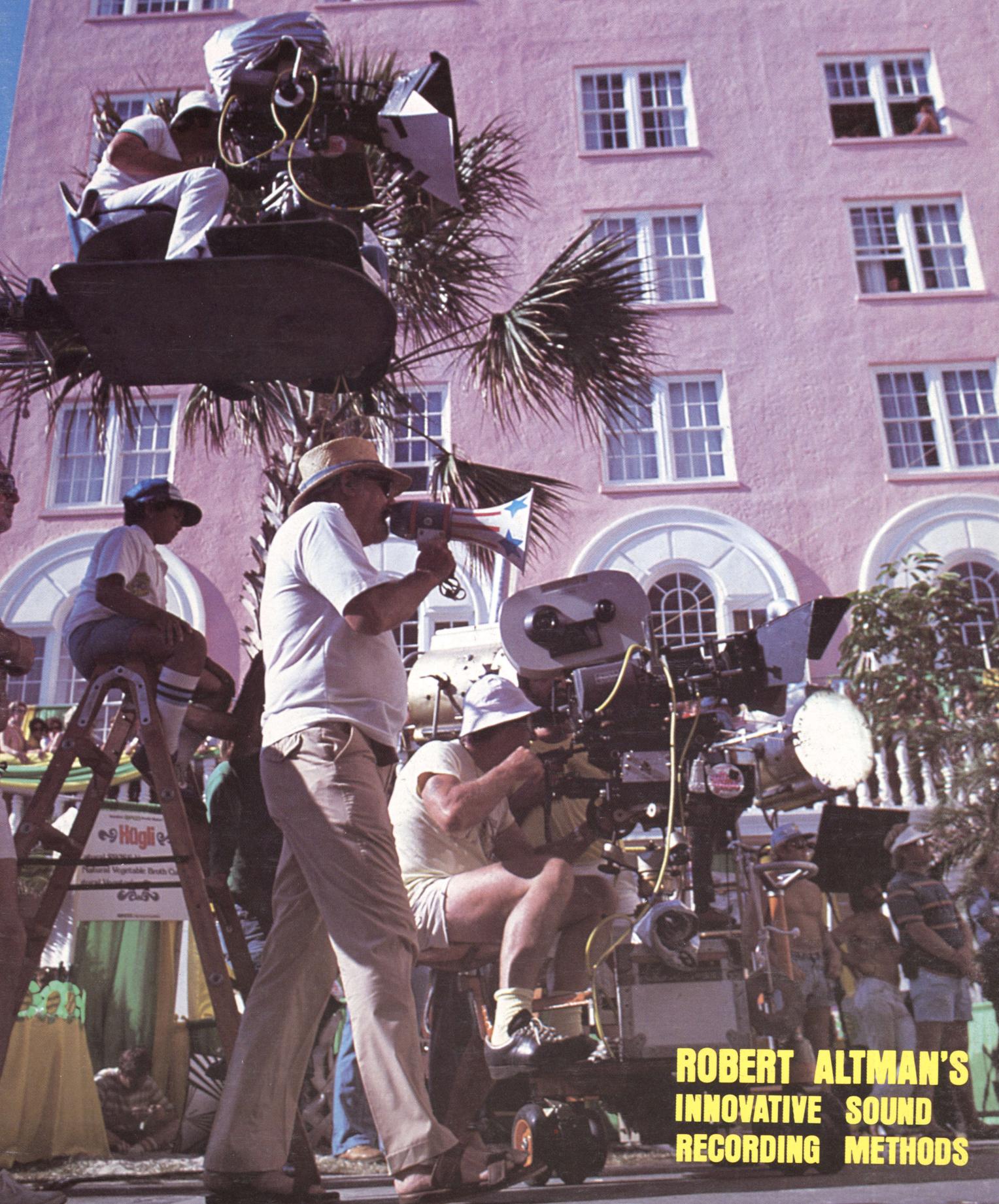


American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

APRIL 1980/\$1.50



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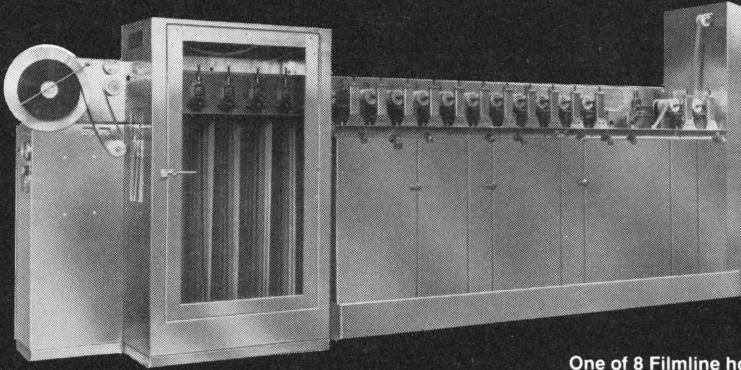
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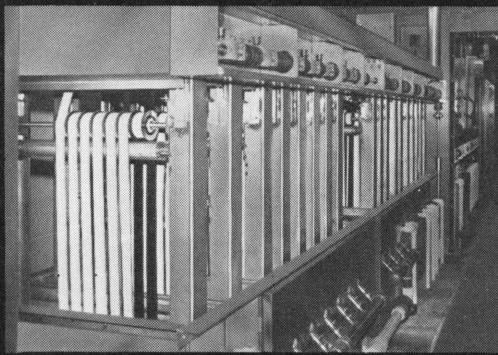
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American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

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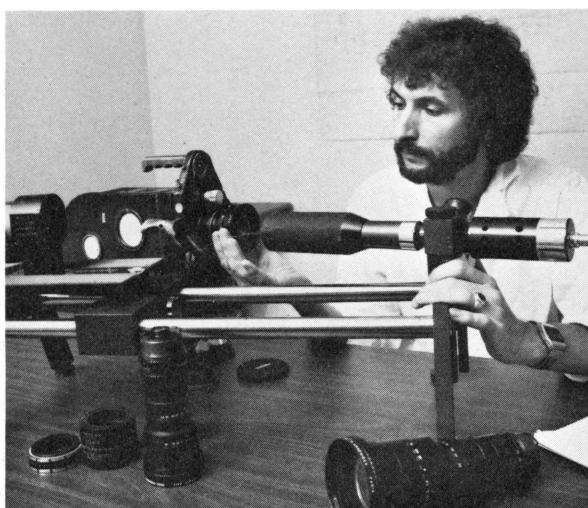
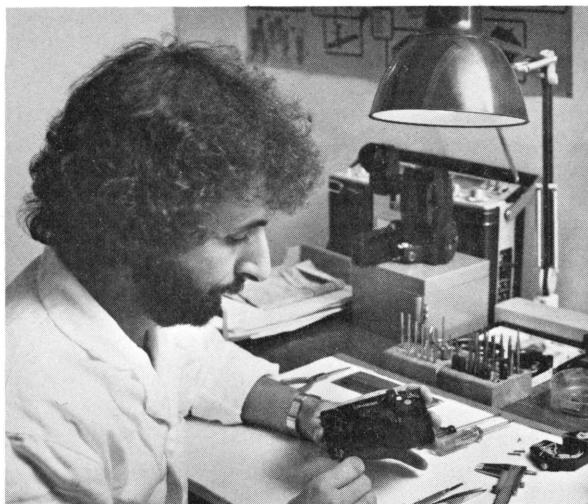
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ON THE COVER: Robert Altman (with star-spangled bullhorn) directs a scene from his new production, "HEALTH", on location in front of a classic old hotel at St. Petersburg Beach, Florida. The comedy, a spoof on health fanatics, stars Carol Burnett, Glenda Jackson, Lauren Bacall, James Garner and Dick Cavett. It was directed by Altman and photographed by Ed Koons.

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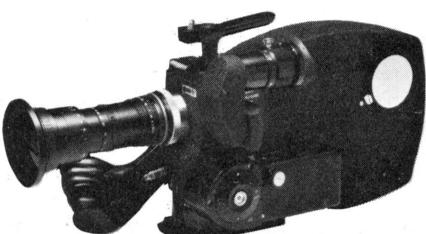
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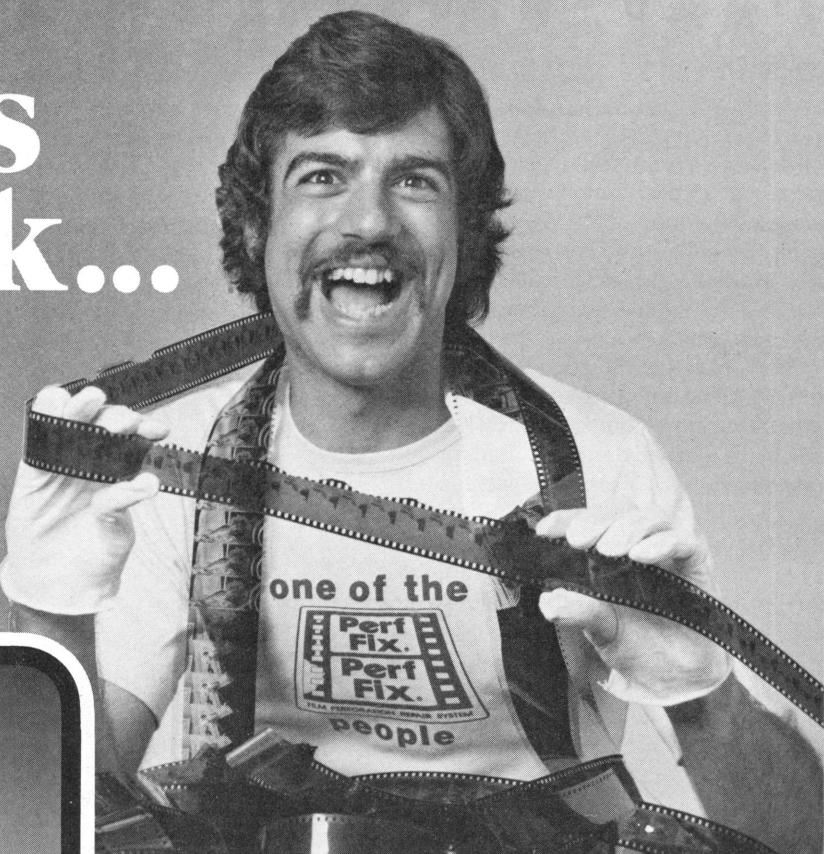
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ARRI HMI REPORT 200

Arriflex Corporation announces first deliveries of their new Arri 200 watt HMI light, the "Report 200." This new light features AC and DC operation through a modular power supply incorporating a square wave ballast for flicker-free operation. DC operation is accomplished using quick chargeable, sealed Ni-Cad batteries. The lamphead is lightweight, focusable, and can be hand-held or lightstand mounted. Accessories include barn doors, gel holders, dichroic filters and case.

Daylight balanced, cool operating, lightweight and compact, the Arri Report 200 is ideal for all location production.

For further information, please contact: Arriflex Corporation; One Westchester Plaza; Elmsford, New York 10523.

NEW FAX ANIMATION PLANNING BOARD INTRODUCED

Checking and aligning of animation cels, rough layouts, and correlating art with existing backgrounds, are simplified with the new Fax Animation Planning Board. Board, and the same unique two-inch bars used with the Fax Animation Disc, are 42 inches long, and reversible. This permits checking both 12- and 16-field work, and working with double or triple backgrounds. Bars have an 18-inch-long center scale for control of east-west movement. Board has a white plexiglass window to permit back-lighting. Two hooks are provided so the board may be mounted on a sloping drafting table. Either Acme or Oxberry pegs are available. For more information, write The Fax Company, 374 South Fair Oaks Avenue, Pasadena, CA 91105.

T.A.V. PIONEERS WITH LASER BEAM

Trans-American Video, Inc., of Nevada, a division of Merv Griffin Productions, made an historical step forward in television by replacing hard cable with a laser beam.

This was done for the first time, when the "Holmes-Shaver" heavyweight championship fight was nationally televised for the ABC Network, originating from Caesars Palace, Las Vegas.

The laser technology was used to transmit sight and sound information from the fight's origination at Caesars

Sports Pavilion, to a closed circuit audience of 3000 people in the Caesars Palace ballroom.

Barney Rawlings, Director of Video Services for the Las Vegas based facility explained, "In order to place cameras in hard-to-reach areas, we previously had to use long cables stretched across many busy thoroughfares, up the side of tall buildings, or across rugged terrain. Now, to better service the producers, we simply establish the laser beam and transmit the video and audio, using the beam as a carrier. This technology is a revolutionary break-through which will continue to bring more versatility to all television productions."

Trans-American Video, Inc., located at 1541 North Vine Street, Hollywood, California, is one of the world's major mobile television production facilities with remote offices at 3355 West Spring Mountain Road, Las Vegas, Nevada.

ROSCO DIFFUSION TEST KIT OFFERS NEW POSSIBILITIES IN FILM LIGHTING

A new Diffusion Test Kit provides cinematographers, and other film professionals with a range of possibilities for changing the character and properties of light.

Rosco's Diffusion Test Kit consists of ten materials, and costs \$9.95. It is designed to work with existing film and TV fixtures. Some of the materials allow the user to make an ellipsoidal behave like a fresnel; others soften the edges of beam shapes; some even make the edge of the beam shape disappear!

The materials are cut to 10" x 12" sheets to conveniently fit most lighting instruments. Combinations of several different materials expand the range of possibilities even further.

Each Kit is packaged in a clear, reusable plastic envelope and is accompanied by a set of envelopes and instructions and a wall chart which demonstrates the effect each diffuser will produce.

The Rosco Cinegel Diffusion Test Kit gives any Director of Photography the freedom to create a desired mood, and ultimately to enhance the quality of his entire film.

The Kit is available for \$9.95 at any Rosco dealer or by mail from a Rosco office. Rosco offices are located at: 36

Bush Avenue, Port Chester, New York 10573; phone (914) 937-1300; 1135 North Highland Avenue, Hollywood, California 90038; phone (213) 462-2233.

MICRON AUDIO PRODUCTS INTRODUCE DIVERSITY SYSTEM

Micron Audio Products has introduced an innovative new Mobile Diversity System to update the Micron 100 Series Wireless Microphone System and provide a dramatic improvement to the "dead spot" (signal dropout) problem. Used in tandem with two or more receivers, the system automatically selects the strongest available signal and "fills in the dips."

The Diversity system and Micron Wireless Mics have already been used on numerous feature films and major TV series including *THE ELECTRIC HORSEMAN* starring Robert Redford and Jane Fonda, "The Waltons," etc. Geared to yield maximum dialogue recording flexibility in studios or on location, the receivers are powered by batteries or Nagra Recorders. At the heart of the system is the MDU 101 Combining Unit which compares signal strength from each receiver, combines these signals in a buffer amplifier and rejects any signal which may be significantly weaker.

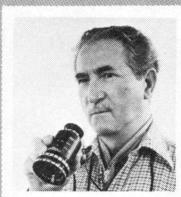
First introduced in 1978, the Micron Wireless Mic was developed to provide superior sound quality under the most difficult location shooting situations. All Micron Systems are available from Micron Audio Products, 210 Westlake Dr., Valhalla, N.Y. 10595, (914) 761-6520, and from authorized dealers. ■

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- Click-stop aspect ratio controls for selecting formats of 1.33, TV Safe Action Area, 1.66, 1.85 and 2.35.
- Three windows on barrel of viewfinder for easy readouts of focal length of specific lens for 16mm and 35mm Academy or 35mm Anamorphic format.
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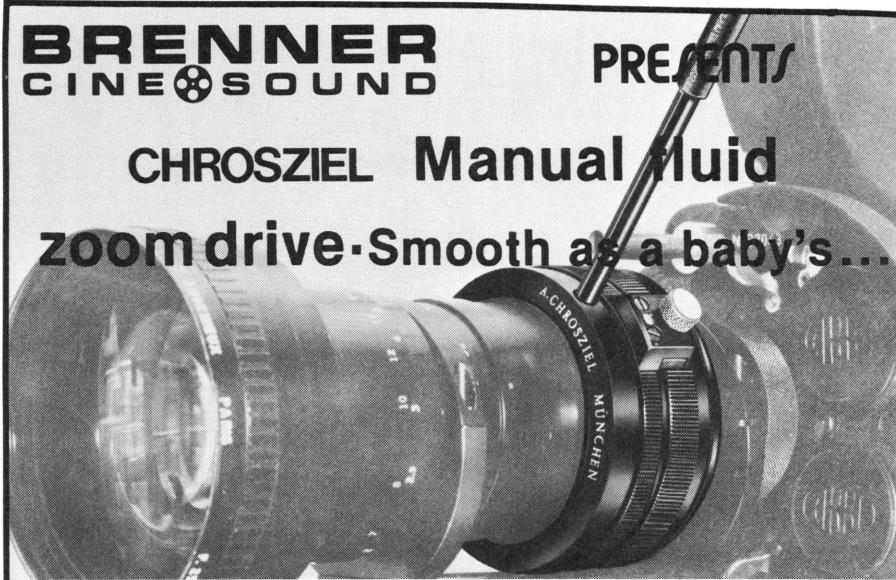


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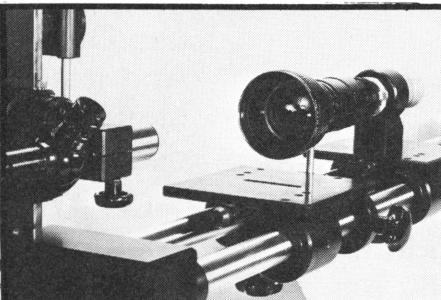
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● Model 9.5A	for Angenieux Zoom Lens 9.5-57mm
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THE BOOKSHELF

By GEORGE L. GEORGE

THE REFERENCE SHELF

The 1980 edition of INTERNATIONAL FILM GUIDE, published yearly since 1964, proves again to be the essential comprehensive survey of world production of theatrical films. Edited by Peter Cowie with his usual competence and reliability, it surveys 53 countries from Afghanistan to Yugoslavia with informative appraisals of their most notable feature films, names 5 "directors of the year" (including Hal Ashby), and covers many other related production activities (Barnes \$7.95).

In a comprehensive listing of over 19,000 theatrical features, THE FILM BUFF'S CHECKLIST OF MOTION PICTURES (1912-1970) provides basic credits as well as "entertainment ratings" bestowed by editor D. Richard Baer and staff (Hollywood Film Archive, 8344 Melrose Ave., Hollywood, CA 90069; library binding \$25.95, hardcover \$19.95).

In REPUBLIC STUDIOS, BETWEEN POVERTY ROW AND THE MAJORS, Richard Maurice Hunt examines correlated aspects of the studio's main activity from the 30's to the 50's—the production of B pictures. The routine nature of the creative staff's performance taught directors and cameramen the value of team work and provided a training ground for their skills (Scarecrow \$13.50).

An anthology of informative articles explores the causes and effects of the addition of sound to the American film. Dealing with the 1925-40 period, SOUND AND THE CINEMA covers both technological and esthetic angles, European influences, and repercussion on film design. The late cinematographer Hal Mohr, directors Capra and Mamoulian are among the contributors to this valuable historic appraisal, edited by Evan William Cameron (Redgrave \$7.40).

Surveying films of the 50's, Adam Garbicz and Jacek Klinowski discuss 318 pictures typical of that era. Their CINEMA, THE MAGIC VEHICLE offers a thoughtful assessment of movies' contents and production techniques during a particularly active period (Scarecrow \$25).

TALENT ROSTER

Director Gordon Parks, whose skill with the camera has been widely recog-

nized, recalls in *TO SMILE IN AUTUMN* his career in literature, journalism and the movies. A sensitive memoir that reflects the successful struggle of a gifted black man to establish himself in a selectively integrated world (Norton \$11.95).

From G. K. Hall, three studies of notable directors: *WILLIAM WYLER* by Michael A. Anderegg, *DOUGLAS SIRK* by Michael Stern and *PETER WATKINS* by Joseph A. Gomez. Each director is considered in the light of his favorite themes and cinematic sense, with an annotated analysis of his films, a bibliography, a filmography, and an index. Knowledgeably edited by Warren French, these excellent volumes display considerable scholarship and distinguished writing (\$9.95 ea.).

Christopher Faulkner's *JEAN RENOIR* is a uniquely authoritative reference and resource guide to the late director's career. A thoroughgoing biography, a filmography rich in factual details, a full-bodied record of his literary output and a wealth of support material make this book an exceptionally valuable research tool (G. K. Hall \$40).

In *THE BEST OF WILL ROGERS*, Bryan Sterling collects observations by the versatile homespun philosopher, columnist and stage-&-screen star on a variety of subjects from politics to women and show business, all marked by a native simplicity that was at once sardonic and sentimental (Crown \$10.95).

Two enterprising Swedish journalists, Frederick Sands and Sven Broman, have compiled in *THE DIVINE GARBO* information gleaned from early observers of her life, plus some original material based on personal contacts. Nothing earthshaking, but of certain interest to fans (Grosset & Dunlap \$17.95). Sam Shaw's *SOPHIA LOREN* is a skilled montage of his photographs and comments combined in an attractive album, augmented by a bio-filmography (Bookthrift \$7.98).

Robert Stack's ebullient autobiography, *STRAIGHT SHOOTING* (with Mark Evans) takes an affectionate and amused look at Hollywood and its unpredictable ways, with intimate anecdotes about peccadilloes he committed or witnessed (Macmillan \$12.95). In *JOHN WAYNE*, Sam Shaw prints photographs (many his own) and comments freely on the life-style and work of the late star (Bookthrift \$7.98).

Two books deal in likeable fashion with an ever popular performer. Dianna Whit-

ley's *BURT REYNOLDS: PORTRAIT OF A SUPERSTAR* enjoyably narrates the actor's on and off screen adventures (Grosset & Dunlap \$5.95). Bernhardt J. Hurwood's *BURT REYNOLDS* stresses his multi-layered personality and the contradictory traits that surfaced with his stardom (Quick Fox \$5.95).

Three collections of portraits offer disparate views of the entertainment world. Kenneth Tynan's *SHOW PEOPLE* interviews (among other luminaries) Mel Brooks in an incisive and hilarious confrontation with the mercurial director/writer (Simon & Schuster \$11.95). In *EXPOSURES*, Andy Warhol accumulates photos and inside stories about a scintillating array of celebrities from Elizabeth Taylor to Kirk Douglas and Zsa Zsa Gabor (Grosset & Dunlap \$25). Marilyn Funt asks *ARE YOU ANYBODY?* of the wives of Lloyd Bridges, Johnny Carson, Sammy Davis Jr., Charlton Heston and many more (Dial \$10.95).

* * *

GENRES AND TECHNIQUES

Audience fascination with terror and the techniques used to stimulate its impact are surveyed in S. S. Prawer's *CALIGARI'S CHILDREN*. It is a well-researched and scholarly work that explores the words and images of the genre, its cultural context, and particularly the link between German silent horror films and their more recent counterparts (Oxford U. Press \$19.95).

Ranging from George O'Brien, Tom Mix and Roy Rogers to James Arness and Dennis Weaver, *THE GREAT COWBOY STARS OF MOVIES AND TELEVISION* provides a broad panorama of a genre that has always been a staple of screen entertainment, informatively surveyed by Lee O. Miller (Arlington \$14.95).

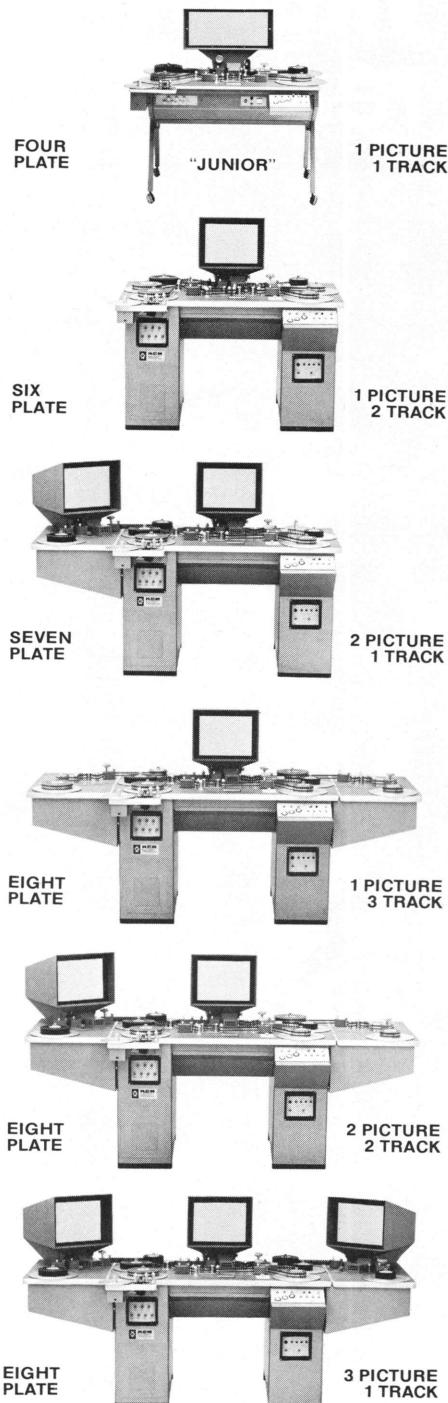
In *THE MUSICAL: FROM BROADWAY TO HOLLYWOOD*, Michael B. Druxman examines 25 instances of stage-to-screen transplants from the hits to the flops. Comparing elements present in both media, he persuasively deduces reasons for the uneven results (Barnes \$17.50).

An inside look at makeup specialists of the technique, *MAKING A MONSTER* by Al Taylor and Sue Roy reveals the intricate creative work involved in the production of the likes of Dracula, Frankenstein and outer-space aliens (Crown \$14.95). ■

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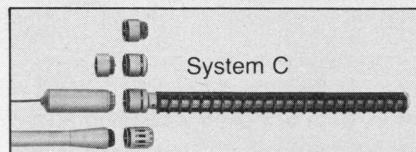
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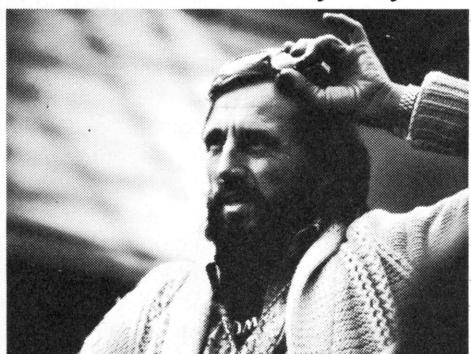
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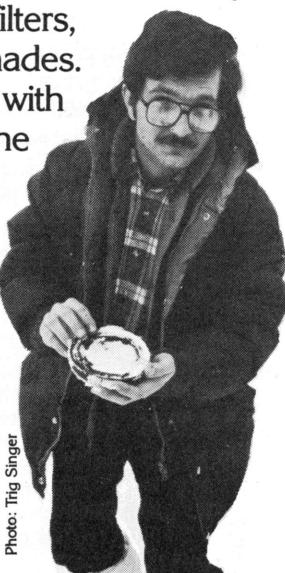


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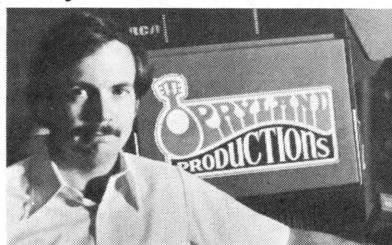
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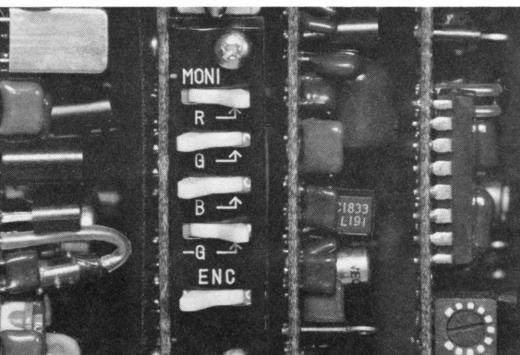
REGISTRATION—III

The fact that the green, red, and blue portions of the video image are generated by three discrete pick-up tubes respectively creates a whole world of possible problems. Like the color printing process or three-color separation negatives, the goal is obviously to have all three color images perfectly aligned when the full color picture is reproduced. This is somewhat easier said than done with the video camera.

The normal procedure is to have the green channel set up as a reference by the camera manufacturer and then subsequently maintained by video engineers using precision test equipment. Assuming this is achieved, the cameraman has only to concern himself with matching the red and blue channels to the green reference. All the individual adjustments and calibrations that exist for the green channel also are present for the red and blue channels including the previously mentioned registration controls of height, width, vertical and horizontal linearity skew, and vertical and horizontal centering.

Of these, the most simple to adjust are luckily the same ones that most often need adjustment; the vertical and horizontal centering. The procedure for optimizing blue and red is quite easy, thanks to the built-in testing circuits that virtually every professional ENG/EFP camera employs.

FIGURE 1—These switches are typical of those found on all ENG/EFP cameras. They control the output of both the camera viewfinder and the monitor jack of the camera. Starting from the top, the "R" is the red tube, "G" is the green tube, "B" is the blue tube and "-G" is "minus green" or "negative green" (see text). Any of these switches can be activated singly or in any combination for diagnostic purposes. The bottom switch marked "ENC" provides a normal color encoded picture and defeats the upper four switches when selected.



The only external device necessary is a registration chart (illustrated previously) which consists of a pattern dominated by a grid of horizontal and vertical black lines on a white background. In the absence of such a chart, a reasonable facsimile can usually be improvised. The camera is placed on a tripod and the lens aimed at the illuminated chart so that it is centered and just fills the entire picture area. The iris should be opened to achieve a 70% signal. The camera is then auto white balanced and the detail circuit should be defeated (usually a simple "on/off" switch marked "DTL"). Now the fun begins.

FIGURE 1 illustrates the set of switches found inside the Ikegami HL-79A camera. Every professional camera has a similar set of switches found either internally or in some cases externally on the camera. These switches control the image to the viewfinder and monitor outputs only and do not usually affect the main video output of the camera. The bottom switch marked "ENC" provides a normal color encoded signal to the viewfinder/monitor and, when activated (right hand position), takes priority over the other switches (i.e. the other switches are literally out of the circuit). However, if the ENC encoder switch is turned off, the other four switches are activated and control the image displayed on the viewfinder/monitor.

The first three switches very simply turn the signals from the red, green and blue channels, respectively, on or off. By turning the green and blue switches off while leaving the red on, only the output of the red tube and its circuits will be displayed, etc. It is the fourth switch, however, that is the most interesting. It is labelled "-G" (minus green) and controls a negative image from the green channel only. If the red ("R") channel and minus green channel ("−G") were activated simultaneously with all other switches off, (as in FIGURE 1) the monitor/viewfinder would display the difference between the red and green channels or literally the red image minus the green image.

Now consider the registration chart. The red channel alone will yield a white image with black lines, while the minus green channel will yield a black image

with white lines. If both circuits are activated together and the camera were absolutely perfectly registered, (an unattainable feat) the image displayed would be pure white with no lines; the grid pattern would disappear completely.

This is precisely the goal during registration. In the above example, if registration were not perfect, the dark lines of the red channel and the light lines of the minus green would be visible, indicating that they are not perfectly aligned. If such is the case, the red channel (*not the green*) must be manipulated until the grid pattern disappears over the major portion of the frame, indicating that the two sets of lines are perfectly overlapped. In actuality, perfect registration is impossible, especially near the four corners of the frame. However, a good camera and a little patience can yield almost perfect registration for a major portion of the image in the center of the frame, and this is a more realistic goal.

As previously mentioned, it is the horizontal and vertical centering that requires the most frequent adjustment. These controls are usually found externally on most cameras or just behind an access door at the back or side. FIGURE 2 shows these controls on the Ikegami H2-79 A. With the camera set up as described and the red and minus green switches only in the "on" position, the red horizontal screw is adjusted until the horizontal lines of the grid "disappear" or become least visible. Attention should be focused on the center portion of the screen, not the periphery. As the screw is turned, the dark lines will shift up or down

Continued on Page 377

FIGURE 2—The four screws in the upper left control the horizontal and vertical centering. The dots above the screws are colored red and blue to indicate respective color channels. Note that there is no external adjustment for green, as this is the reference channel and should not be altered by the cameraman.



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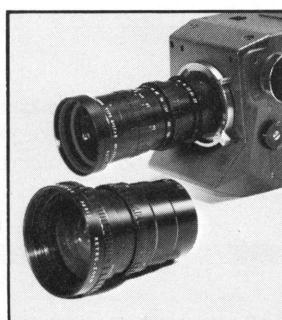
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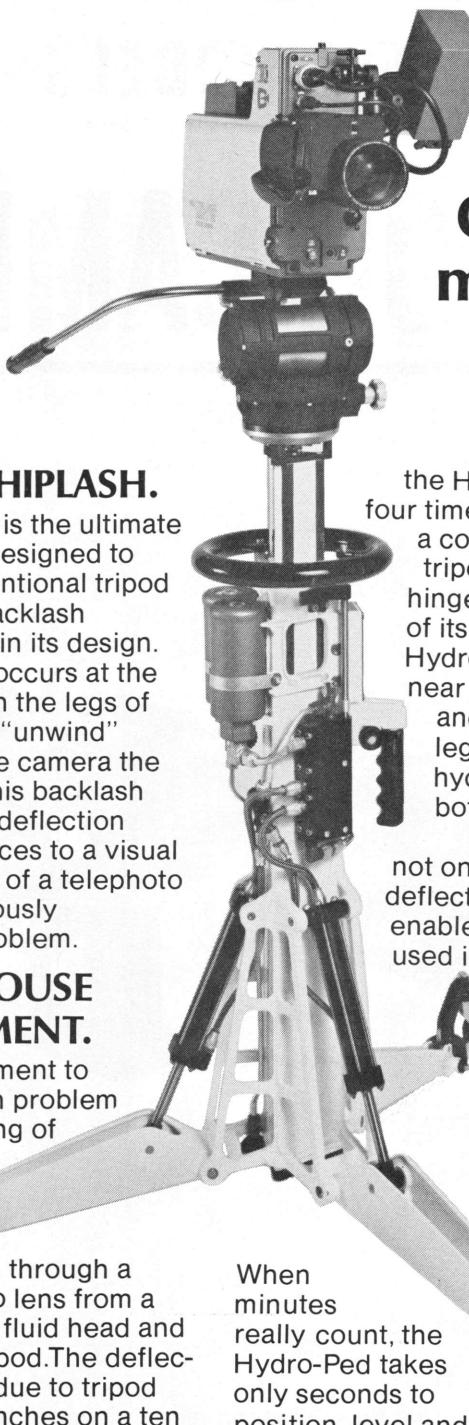
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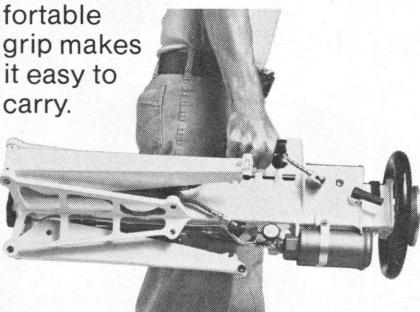
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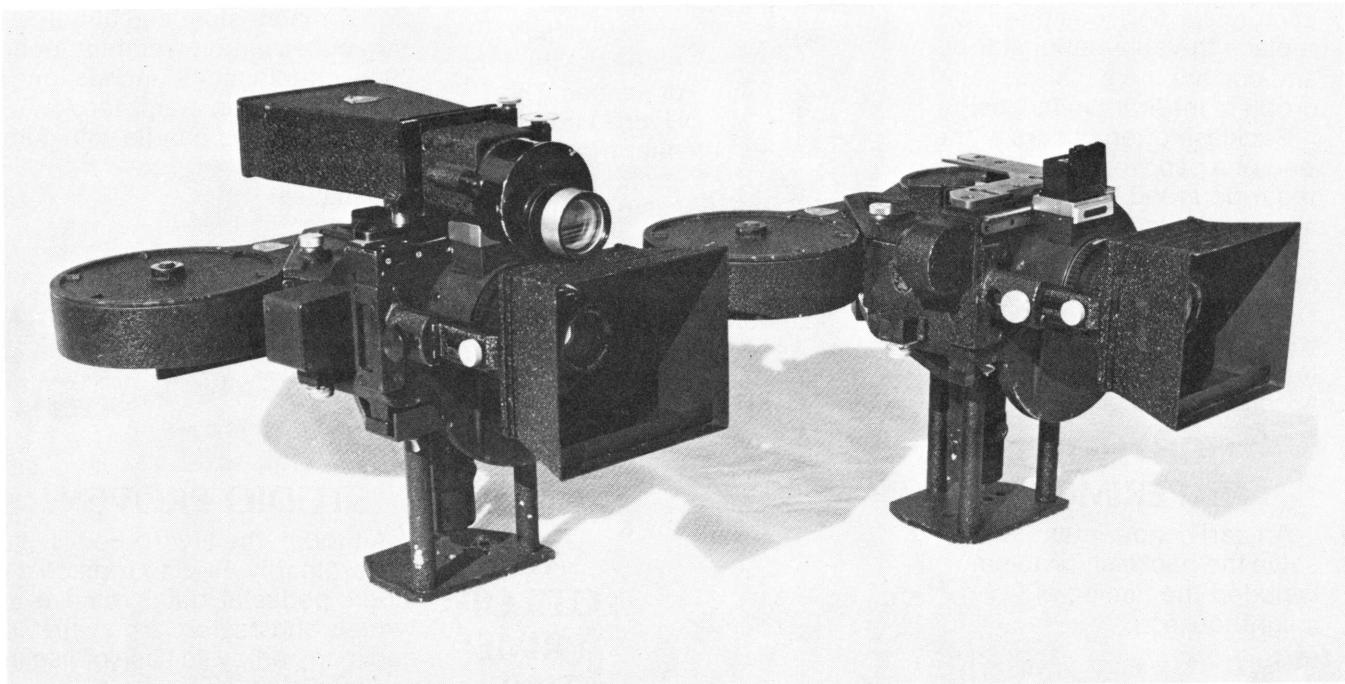
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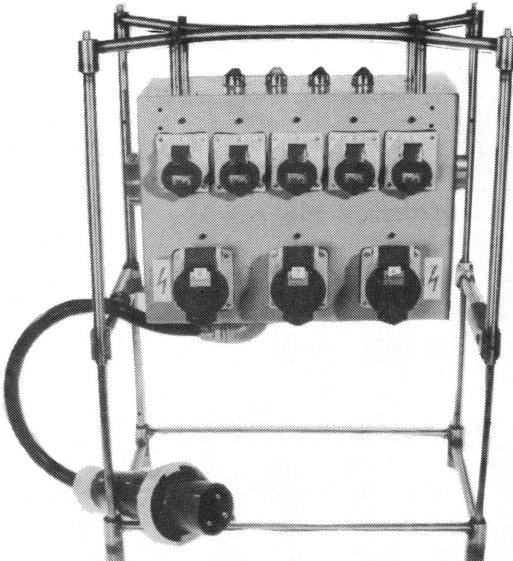
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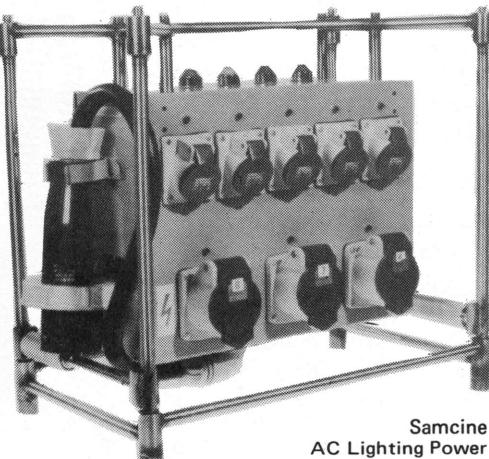
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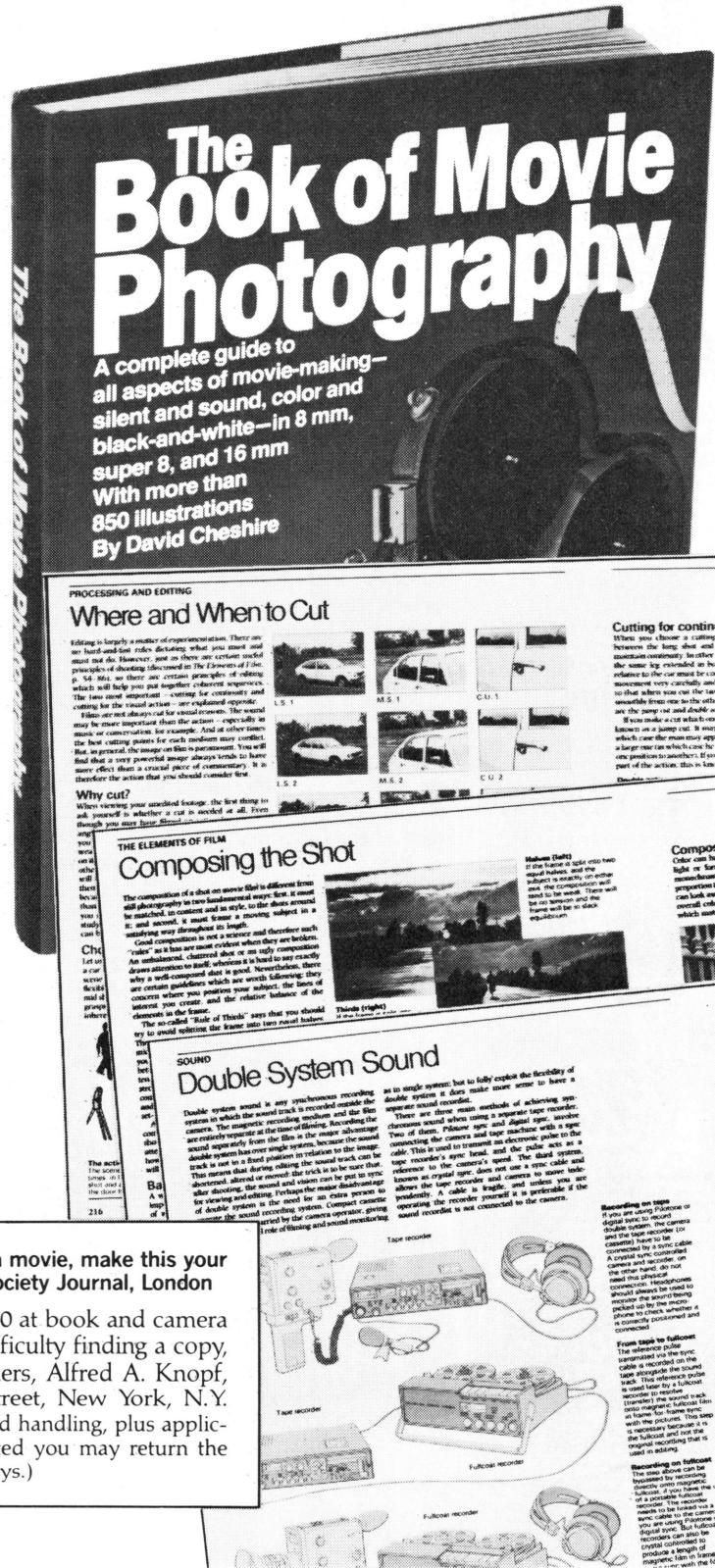
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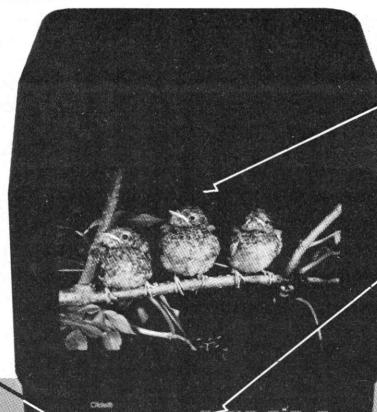
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 William K. Jurgensen
 Boris Kaufman
 Al Keller
 Richard A. Kelley
 W. Wallace Kelley
 Victor Kemper
 Glenn Kershner
 Jess Kiszis
 Richard Kline
 Fred J. Koenekamp
 H.F. Koenekamp
 Laszlo Kovacs
 Milton R. Krasner
 Charles B. Lang
 Vilis Lapenieks
 Joseph W. LaShelle
 Andrew Laszlo
 Ernest Laszlo
 Philip Lathrop
 Sam Leavitt
 Paul K. Lerpae
 James F. Liles
 Glen MacWilliams
 Don Malkames
 Karl Malkames
 Isidore Mankofsky
 Fred Mandl
 Michael D. Margulies
 William Margulies
 Jacques Marquette
 Enzo A. Martinelli
 Joseph V. Maselli
 Terry K. Meade
 Ray Mercer
 David Millin
 Richard Moore
 Robert C. Moreno
 Sol Negrin
 John M. Nickolaus
 Meredith M. Nicholson
 Sven Nykvist
 Emil Oster
 Louis Page
 J.F. Painter
 Kenneth Peach
 Harry Perry
 Alex Phillips
 Frank Phillips
 Clifford Poland
 Jack Priestley
 Earl Rath
 Richard L. Rawlings
 Ray Rennahan
 Gayne Rescher
 Jack L. Richards
 Owen Roizman
 Charles Rosher, Jr.
 Harold Rosson
 Giuseppe Rotunno
 Joseph Ruttenberg
 Robert Sable
 Ted Saizis
 Vincent Saizis
 Howard Schwartz

James Seeley
 Richard Shore
 Lester Shorr
 Clarence W.D. Slifer
 Harkness Smith
 Edward J. Snyder
 William E. Snyder
 Leonard J. South
 William Spencer
 Frank Stanley
 Alan Stenvold
 Clifford Stine
 William J. Storz
 Harry Stradling, Jr.
 Karl Struss
 Robert L. Surtees
 Jack Swain
 Ellis Thackery
 Mario Tosi
 Thomas E. Tutwiler
 Frank Van der Veer
 Charles Van Enger
 Zoli Vidor
 Ted Voigtlander
 Joseph Walker
 Harry Walsh
 John F. Warren
 Gilbert Warrenton
 Harold E. Wellman
 Frederick E. West
 Joseph Westheimer
 Albert Wetzel
 Haskell Wexler
 Charles F. Wheeler
 Gordon Willis
 Harry L. Wolf
 Jack Woolf
 Ralph Woolsey
 Lothrop Worth
 Vilmos Zsigmond
 Frank C. Zuker

Dennis F. Godfrey
 Robert Gottschalk
 William Hansard
 R. Bruce Hill
 Harold Hinkle
 Julian D. Hopkinson
 G. Carleton Hunt
 Fred Hynes
 Masaru Jibiki
 James Johnson
 Robert E. Klees
 John J. Kowalak
 Robert Kreiman
 Joseph R. Lee
 Sol Lesser
 Bern Levy
 Herb A. Lightman
 Grant Loucks
 Lewis Mansfield
 James F. Martin
 Kenneth M. Mason
 Stan Miller
 Walter H. Mills
 George Milton
 George J. Mitchell
 Bernard Newton
 Meredith (Skip) Nicholson
 Kemp Niver
 Capt. Don Norwood
 Otto Paoloni
 Larry Parker
 Warren Parker
 John Pistor
 Carl Porcello
 Edward H. Reichard
 John L. Robertson
 Roderick T. Ryan
 Loren Ryder
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 Mel Sawelson
 Fred J. Scobey
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 Burton Stone
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 Lou Vincent
 Frank Vogelsang
 Jack Webb
 E.M. Whiting, Jr.
 Albert J. Whitlock
 Ralph D. Whitmore, Jr.
 Allan L. Williams
 Michael Zois

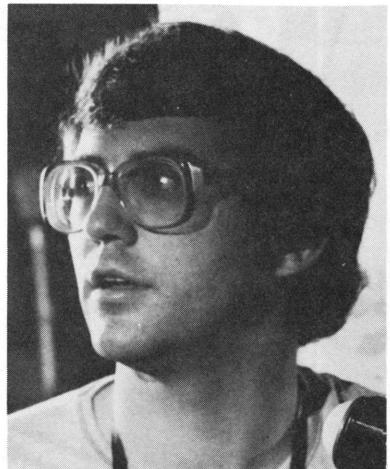
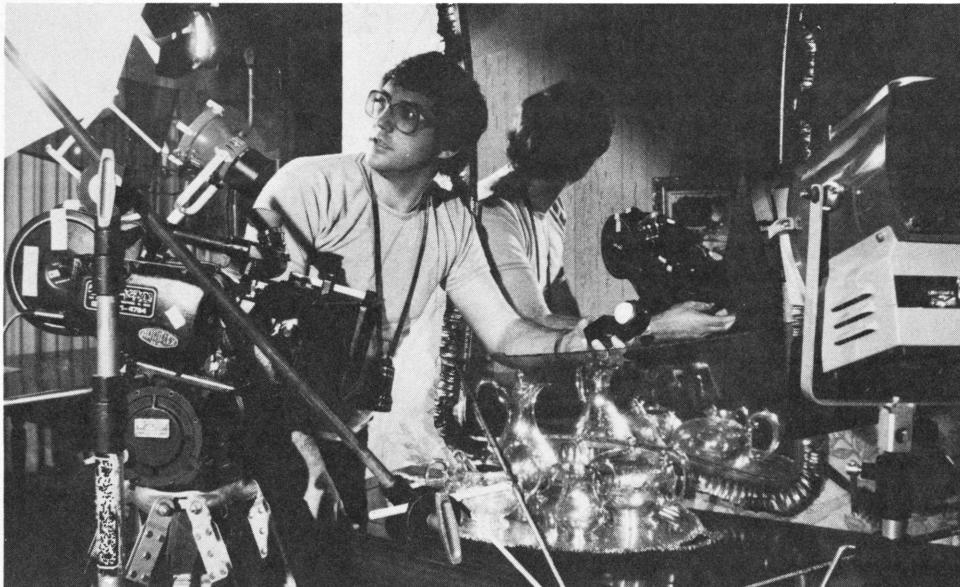
Associate Members

Mark Armistead
 Volker Bahnemann
 Bernard Barron
 Emerson R. Barlow
 Howard Bell
 William A. Bickford
 James Branch
 Gerald D. Brodersen
 Anthony D. Bruno
 Claude Chevereau
 Ronald Cogswell
 Leonard F. Coleman
 Michael Crane
 Robert B. Creamer
 Fred H. Detmers
 Edmund M. Di Giulio
 William W. Edwards
 Walter G. Eggers
 Tom Ellington
 Ted Fogelman
 Milton Forman
 Raymond Gaul
 Richard B. Glickman

Honorary Members

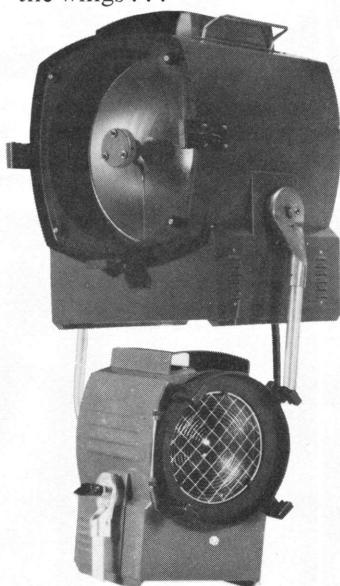
Col. Edwin E. Aldrin, Jr.
 Dr. August Arnold
 Neil A. Armstrong
 Col. Michael Collins
 Edward P. Curtis
 David MacDonald
 G.A. Mitchell
 Sidney P. Solow
 Richard F. Walsh

Fast-rising Director of Photography Tom Denove talks about LTM Lights:



"LTM *listens* to the people who use their lights. They don't just brush it off, they go ahead and *do* something about it. For example, they're the only ones to give us a range of HMI lights from 4K down to 200W, with both fresnels and clear lenses, plus soft lights and "super" spots. Most of us have used the big HMI's as a matter of course on exteriors, simply because they do a better job and save time. Moving to an interior, though, we either had to leave the HMI's outside and switch, or take the extra time involved in mixing the HMI's and smaller quartz lights. Now, with LTM's range, we can save that cost of extra lights or extra time on the set — and get better, more consistent quality of light in the exterior/interior transitions — by using HMI all the way. Because LTM listened to us, they re-engineered all their HMI lights, making them so much cooler, smaller and lighter in weight than others of comparable output that they're really practical to use in tight quarters and a lot faster to position. Another thing: the cost of power used to be meaningless. Now it has shot up and has got to go a lot higher, so it has become a meaningful cost factor in a budget. LTM's lights draw so much less current per actual output than any others that they save a lot of dollars by the end of a production. With all that, there's one thing about them I like even more; the marvelous *texture* of light they put out . . . very much different even from other HMI's. Every cinematographer will understand what I'm talking about . . . that special 'feel' that lets you mold the light to exactly what you want, to create the fullest sense of life and character and dimension in a scene. My business is making movies, not selling lights. So, to me, any light comes down to two practical considerations. One, a picture can be seen and defined only as reflected and refracted light, so I want to give it the best *quality* of light I can manage. Two, time and budget are critical to every picture, so I try to use the equipment that will help move the production along the fastest at the least end cost. LTM's line of lights meets both requirements better than any others I know of."

Tom Denove is young in years, but not many have spent as much of their lives in making motion pictures. From the time he could toddle around the lot, Tom was the eager shadow of his talented and thoroughly professional father, Jack Denove, and he absorbed camera lore like a thirsty sponge. His enthusiasm for the art has never waned. He brings to a ten-second commercial the same highly developed skills, creative vision and sound cinematic judgement as he devotes to a full-length feature. On every production, Tom keeps a "happy set". He makes it seem easy, moving ahead with a cheerful, quiet professionalism that gets things done swiftly and without stress. He has become one of Hollywood's very busy cameramen, and many would be willing to lay solid bets that somewhere ahead is an Oscar waiting in the wings . . .



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SAGA OF A SHOESTRING EPIC

By GARY W. JONES

Spartan budgets and ambitious scenarios are not uncommon stablemates in motion picture production. *American Cinematographer* often recounts the pursuit of improbable dreams by tenacious and imaginative (and usually under-financed) filmmakers.

Another such saga quietly unfolded last year in Arkansas. The project: a 45-minute, historical drama—complete with authentic 19th-century costumes and settings and a nearly 100-member cast. The total production budget: \$18,000.

The guiding ambition behind this cinematic quest is a practicing organi-

The filming of an impossible dream: a 45-minute historical drama—complete with 19th century costumes and settings—on a tiny budget

zational psychologist and part-time quixotic filmmaker named Jess Young. Dr. Young began his project several years ago after becoming inspired by the Hollywood-produced introduction movie used at Colonial Williamsburg. As an ex-broadcaster, amateur historian and occasional writer/producer, Dr. Young felt that the colorful early history of Arkansas and the existence in Little Rock of a renowned restoration of the state's original territorial capitol would make possible a good film.

For three years Dr. Young researched Arkansas history for events and conflicts that might lend themselves to a short

dramatic film. Finally, among the circumstances surrounding the elections of 1827, Young found the elements he needed to satisfy both historians and contemporary motion picture audiences. It was all there: murder, political intrigue, young love, pistol duels, fights, freedom of the press struggles and history-making conflict.

As it turned out, researching and writing the *PRINTER TO THE TERRITORY* script were easy compared to what followed. Since the main "hero" of Dr. Young's film was William Woodruff, the founder of the *Arkansas Gazette*—the oldest newspaper west of the Mississippi River—it seemed natural that the publication's current management might want to sponsor such a film in observance of the paper's 161st anniversary. Indeed, since the history of the *Gazette* was fertile ground for motion picture ideas, the newspaper agreed with Dr. Young. However, the prestigious daily thought the responsibility for such a project should fall to someone, say, like David Wolper—not to a struggling local filmmaker with a minuscule budget.

As William Woodruff's successors patiently awaited a call from Hollywood, Dr. Young meanwhile set out to secure the blessing of the Arkansas Territorial Restoration, which controlled the authentic historical buildings and artifacts required for the production. Dr. Young submitted his script to a panel of scholars who could attest to the project's historical accuracy and potential educational benefit. After months of revisions and academics vs. artistic verbal thrusts and parries, Dr. Young emerged with a script that satisfied both requirements of accuracy and dramatic potential.

With a completed script and a flurry of bureaucratic paperwork, Dr. Young managed to obtain a \$16,263 grant from the Arkansas Endowment for the Humanities. Dr. Young shook a few other piggy banks—including his own—and began work with an \$18,000 budget.

Here is where Dr. Young's training as a psychologist became every bit as valuable as his filmmaking experience. Only an individual with psychological insight could have convinced several hundred people to audition for roles that would require much of their time for a month and pay absolutely nothing. Only a producer having firsthand professional experience with mental illness is likely to have started a full-blown dramatic film with a

Continued on Page 376



In the early 19th century in Arkansas Territory duels were commonplace. *PRINTER TO THE TERRITORY* features the famous Conway-Crittenden duel of 1827, in which political hopeful Robert Crittenden (played by Robert Hulsey) mortally wounded the popular congressional delegate Henry Conway (played by Steve Wilson).

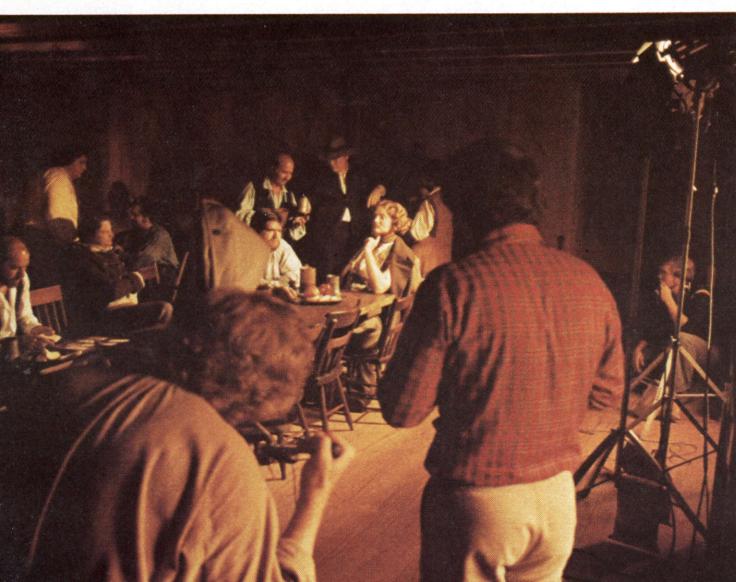




(LEFT) Steve Wilson as Henry W. Conway (center, hat in hand) electioneering in the turbulent 1827 election, as depicted in *PRINTER TO THE TERRITORY*. (RIGHT) Dr. Jess Young, writer/producer/cameraman/editor, gets ready for a shot aboard the rain-drenched *Mary Woods* riverboat. The rectangular black case contains the 12-volt motorcycle battery which powers the Bolex MST motor on the Bolex SBM camera, equipped with an Angenieux 12mm-120mm lens. Camera is enclosed within a 1/4" plywood blimp lined with sheet lead and high-density foam rubber to reduce camera noise. Side cover of blimp is held to the blimp body by two boys' size belts. 400' magazine cover is part of standard Bolex sound barney. Outside surface of plywood blimp is covered with foam rubber and gray vinyl. This ingenious and effective blimp was built by Dr. Young.



(LEFT) Hiram Whittington (left), played by John Thompson, and captain of the riverboat (right), played by Lairs Miller. Miller is superintendent of the Arkansas state park containing the authentic riverboat—and is, in fact, a qualified pilot of the boat. (RIGHT) One of the opening scenes of Dr. Young's film shot at Jacksonport State Park aboard the *Mary Woods* riverboat. (BELOW LEFT) Dr. David Ritchie rehearses a scene in the Hinderliter Tavern, one of the oldest buildings at the Arkansas Territorial Restoration in Little Rock. (RIGHT) Most of the costumes in *PRINTER TO THE TERRITORY* were used originally in *ROOTS* and *THE ADAMS CHRONICLES*.



ROBERT ALTMAN'S INNOVATIVE SOUND TECHNIQUES

By LEAR LEVIN

Robert Altman is a friendly but irascible man who saves his straight answers for his actors and crew. An interviewer rarely has a chance of getting on the inside. Concerning the actual use of his sound system, all information is technically factual. With regard to the director's style, the opinions are purely my own.

Altman has directed or produced more than twenty feature films in his career and his awareness of the sound track has always been an integral part of his work. His use of overlapping dialogue tracks, improvisation, and a constant audio undertone have become his trademarks. This style was first brought to prominence in *MCCABE AND MRS. MILLER*. This work, however, only provoked a deeper interest in his desire to record multiple dialogue tracks at the same time. His wish was to create a condition figuratively similar to that of a painter who might coat his canvas with layer upon layer of color, allowing each brush stroke to give character and texture to the final rendering.

Producer/director Robert Altman, described by the author as "a friendly but irascible man who saves his straight answers for his actors and crew", devotes some of that attention to Carol Burnett and Dick Cavett prior to filming of a scene for his new production, "HEALTH", a comedy which spoofs extreme health fads. Other stars include Glenda Jackson, Lauren Bacall and James Garner.



How this inventive producer/director has evolved a style of overlapping dialogue tracks, improvisation and a constant audio undertone to create an effect like that of a painter coating his canvas with layers of color

Altman is basically a shy man and I believe this quality, coupled with his desire to play it loose and not offend or inhibit his performers, has formed his approach to sound. He prefers to be a *voyeur*, an eavesdropper, a critical observer with both his eyes and ears exploring separate parts of the whole. This is often accomplished while a slowly moving zoom takes us in for a close look at the action, or a long lens follows one of his actors through a crowd. Radio mikes are always the order of the day and as many as 14 recording channels are constantly at his command. Probing long-barreled mikes are kept far away from the actors.

His camera technique also reflects his personality.

Two cameras with zooms are most often employed and although this creates compromises in lighting and staging, he prefers this method for its spontaneity and swift coverage. The end of the zoom is used for obtaining closeups, rather than the selection of a specific lens and

best distance for each actor's expression. A long focal-length lens will not intimidate the performers nor violate their space and they need not be confronted by the mechanism of the camera. By staging this way he makes a sacrifice in visual quality, but one he feels is necessary to his overall approach.

To me, the most obvious measure of his *laissez faire* approach to shooting are his film scripts, and if the script of *HEALTH* is any example, they are solely embarkation points for his ideas. On *HEALTH* some of the actors have written a great deal of their own dialogue, which is not uncommon on an Altman film, while improvising lines as the camera rolls is practically a way of life.

The story of *HEALTH* takes place in St. Petersburg Beach, Florida, in the midst of a health food convention. The enclave brings together such bizarre characters as an 80-year-old somnambulistic virgin, female impersonators, several madmen, a few talking vegetables, a government agent and a long list of self-seeking personalities caught up in an organizational power struggle. This thinly veiled political satire features stars like Carol Burnett, James Garner, Glenda Jackson, Lauren Bacall, Dick Cavett, Henry Gibson, Paul Dooley, Dinah Shore and a list of supporting characters and speaking parts which runs to infinity. The intrigues which develop make for good conflict and spur the kind of games that are often visible in Altman films.

His set has a homelike atmosphere which is demonstrated by the amount of family and friends constantly at hand. The usual six-day-week location schedule is adhered to, but his 8-to-5 daily shooting hours make a family and social life quite possible and keep the film's temperament relaxed and cordial. The director is always available to his cast and crew and his patience is boundless. His mind appears active, no matter how weighed down with production details or numbed by lack of sleep. His interest in what's going on both in front and behind the lenses never flags. Only the mention of backgammon seems to divert his attention to matters less portentous, for next to film, this game seems to be his passion.

The task of assembling the equipment and developing a method of recording multiple tracks of sync dialogue and effects on location, insuring the audio flexibility Altman sought, fell to the well-

known Academy Award winning sound engineer, James R. Webb. (See *American Cinematographer*, April 1979 for details of his actual methods.) The technique that was applied is similar to that used in music recording studios where up to 40 tracks are often run during a single take.

CALIFORNIA SPLIT was the first film on which Webb, under the aegis of Altman, successfully used the multiple track system.

Today, Bob Gravenor is at the controls of Altman's 8-track system. He has used it on five productions for the Altman organization. Gravenor is an articulate and outspoken young sound engineer with a deep commitment to obtaining the highest quality sound possible. Several years in the music recording industry have not hurt his familiarity with 8-track and his easy going style fits in well with everyone on the set. "There are never the usual squabbles between sound and camera on an Altman film," Bob says, "because the cinematographer never has to worry about the boom shadows." The Director of Photography on *HEALTH* is Ed Koons and he agreed that the use of the 8-track system was a blessing to him, especially with the swift pace Altman demands. (The film finished 2½ weeks ahead of schedule.)

A boom was used on two occasions when boom man, Don Merrit, employed it to fishpole action in a water scene and to cover a fight where body mikes were out of the question. Don spent most of his

A Mini-Mike is placed on actor James Garner after he has stepped from a swimming pool. He was boom-miked while actually in the pool.



Don Merrit wires a casual Dick Cavett with a wireless microphone for a scene which he plays with James Garner (seen in background). Radio mikes are always the order of the day on an Altman set and as many as 14 recording channels are constantly at his command. Probing long-barreled mikes are kept far away from the actors.

time, however, wiring up actors with the assistance of cableman Doug Shuman. Don places and aims the relay antenna, sets ambient microphones for collecting sync background tracks and, from the looks of his arms, spends what time is left lifting weights.

The heart of the Altman system is a John Stevens 8-track tape recorder. It offers seven channels for recording and it can be tied to a similar unit providing up to 14 channels. (The eighth channel is used only for sync.) The unit was designed without capstans and is totally servo-controlled. The absence of capstans practically eliminates any wow or flutter on the track. The entire system—which includes mixing panels, relays, two Nagra, playback speakers and Bob's cigarettes—can be operated from 12-volt rechargeable batteries or A.C. The unit is nestled in a cart designed by Gravenor out of 66T6 aluminum aircraft alloy which has the strength of steel at one-third the weight. One person can easily move the entire package around.

Bob also carries a complete selection of traditional equipment for recording music and perspective sound. This equipment includes Neumann, Schoeps, Sennheiser and AKG microphones, with a vast array of accessories to support them. The additional equipment comes in handy, since Altman often records live music while he shoots, and on *HEALTH* some music was done in this fashion.

The ear of the 8-track system is the Mini-Mike made by Ivan Kruglak of Coherent Communications. The Mini was designed so that the frequency response would match a Sennheiser as closely as possible while concealed under the clothing (or even in the navel) of an actor. (One scene in *HEALTH* demanded such a placement.)

Porous foam rubber is placed over the tiny instrument before it is wrapped in a silk gag which makes it all but impervious to wind. Its cable has also been specially constructed to avoid transmission of clothing noise back to the mike. It is smaller than a Sony ECM50 and its micro-flat size has permitted it to be concealed on occasion in various hairdos on both men and women. The skull, being all bone, is a good transmitter. Hair is so fine that rustling is not a problem and the mike is always on axis, no matter which way the head is turned. Gravenor, not noted for his sense of humor, stated that I would need a massive transplant or a good weave job before he'd try this technique on me.

Bob likes the use of organic materials in costumes such as cotton or silk. He feels, as most sound men do, that these natural fibers greatly reduce clothing noise. Unfortunately for Costume Designer Scott Bushnell, the film was wardrobe in Florida where polyester is both king and queen. She was forced to travel **Continued overleaf**





Altman soars high on a Chapman Titan crane to direct a "cast of hundreds" in a scene for "HEALTH", while on location at St. Petersburg Beach, Florida. The imposing pink structure in the background is the famed Don Cesar Hotel, which makes an ideal setting for this comedy in which some of the participants dress up as giant vegetables.

north for more of a fabric selection.

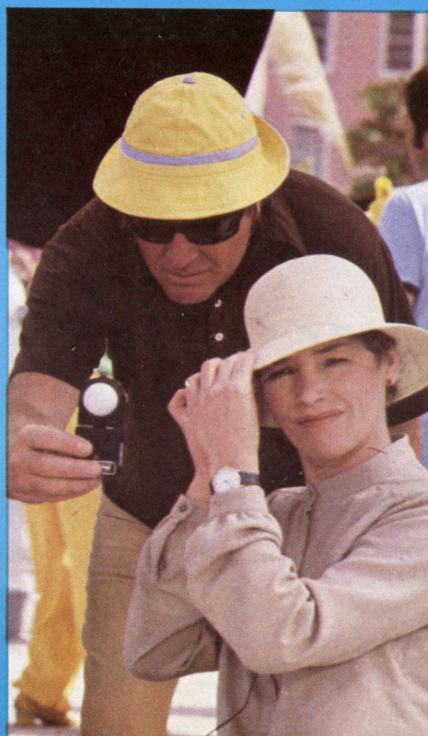
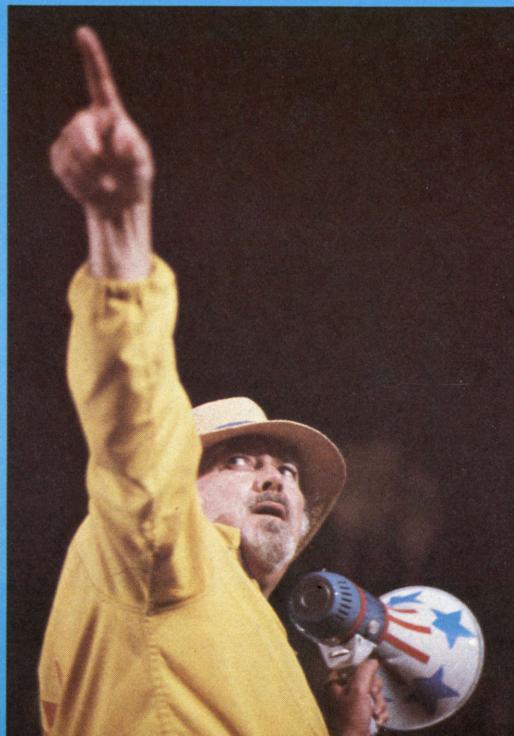
For a wireless transmitter Bob Gravenor uses the English Micron, which he feels is the best unit presently available. He showed me a case which contained nearly twenty of these little beauties and said, "In the event Altman

wants to wire the world, we've got 'em faded."

To concentrate on his recording of dialogue Bob changed all the frequencies on his mixing panel to those centered on the human voice. He also does a great deal of equalization in his mixing

procedure, but unlike most mixers, he uses all those little E.Q. knobs to make his various microphones sound like a single unit, rather than using the equalization technique to roll off set noise and background sound. He feels that the practice of tuning out all those stray

(LEFT) Bob Gravenor, sound mixer, looking not unlike a mobile hot dog salesman, at the controls of the 8-track system he now orchestrates for Altman. (CENTER) Altman (holding star-spangled bullhorn) directs a night crowd scene. (RIGHT) Director of Photography Edmund Koons checks the incident light falling on Jackson. Cinematographers love Altman's method of radio-miking because it frees them from the usual boom shadow problems.





(LEFT) Script Supervisor Luca Koumelis watches and listens to a scene. She can select any channel during a take in order to monitor the dialogue. She obviously cannot keep track of a dozen speaking parts at once, but tries "to come as close as humanly possible." Hers is not an easy job, since Altman is famous for letting his actors wander from the text and improvise action as well as dialogue. (RIGHT) Actor wears a stretch fabric holster which contains a wireless transmitter.

sounds makes for a very thin track and gives the rerecording mixer little to work with.

Richard Portman was a member of Altman's staff until recently and set up a beautiful rerecording facility at their new Lion's Gate headquarters in West Los Angeles. Because the sound works are so available, Gravenor has the distinct luxury of discussing sound levels and

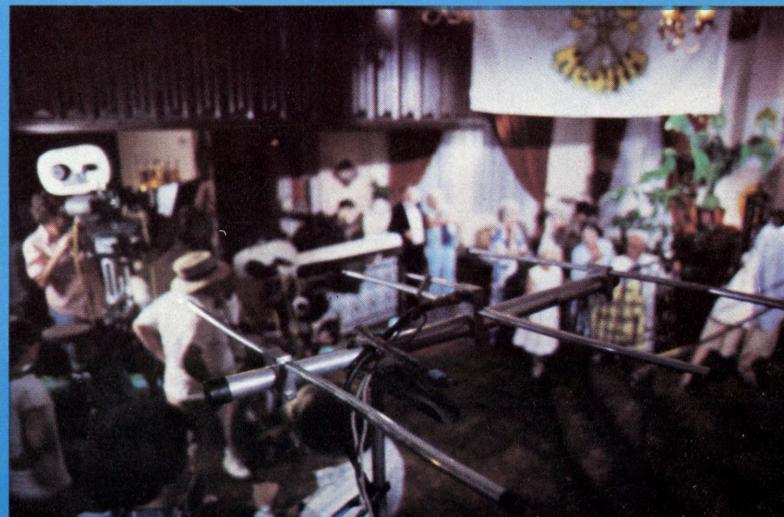
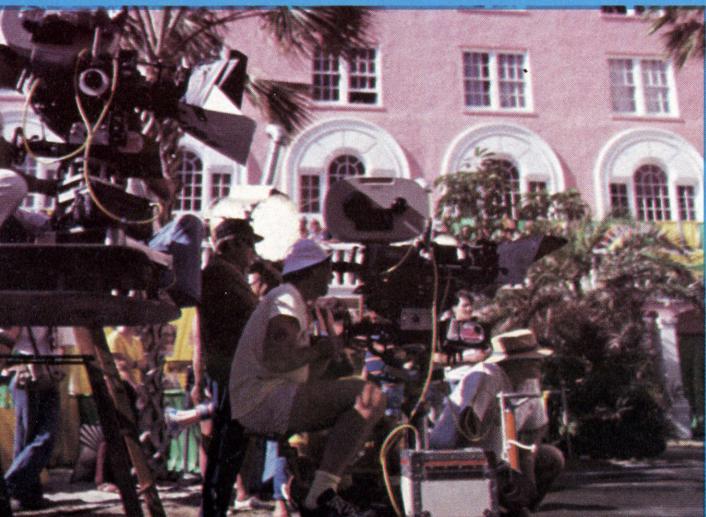
any potential problems with whatever mixer is assigned to rerecord an Altman film prior to the camera rolling. The fact that most set mixers and rerecording mixers don't get along does not affect the harmonious relationship Gravenor enjoys at the Lion's Gate facility. Here on his home ground, Gravenor and others can help Altman take his sound ideas to the limit and hopefully beyond.

I asked both Bob Gravenor and Don Merrit, since they alternate work between recording more traditional perspective sound for other companies and using the 8-track system on Altman-sponsored projects, if they would give me a little pro and con on the system. They smiled, looked at one another, looked over their shoulder and then said, "Sure."

Continued on Page 368



(LEFT) Bob Gravenor's son, Misha, listens in while his dad works the complex mixing panel of the 8-track system. (RIGHT) Cableman Doug Shuman changes tape on 8-track machine which rests at the bottom of Gravenor's sound cart. (BELOW LEFT) Altman often used two Panaflex cameras with anamorphic zooms wherever he felt double coverage might aid spontaneity. (RIGHT) The high-gain directional antenna used by Gravenor, which takes the signal from the wireless transmitters and beams it directly to the nearby receiver, avoiding much unwanted interference.



SHOOTING COLOR NEGATIVE FOR DIRECT TRANSFER TO TAPE

The pros and cons of a bold method of shooting a Lucille Ball special on film, then transferring the negative to tape for TV transmission

The recently aired Lucille Ball television special, *LUCY MOVES TO NBC*, was directed by Jack Donohue before a live studio audience and photographed on Eastman Color Negative 5247 by three camera crews under the supervision of Director of Photography Lester Shorr, ASC.

Up to that point, the procedure was standard, but starting with the next phase the technical methodology assumed innovative proportions—namely, that the processed 5247 negative was used solely for direct transfer to video tape. From that point on, the original negative was not handled again; all post-production processes (including editing and special effects) were accomplished on video tape. The laboratory selected to make

the film negative-to-tape transfers and provide post-production facilities was Consolidated Film Industries (CFI) in Hollywood.

While it is common network practice to transfer motion picture release prints to video tape for actual telecasting, it is rarely (except with the odd TV commercial) that color negative is transferred directly to tape with no step in between. Now that the method has been utilized successfully on a full-length prime-time television special, there is a temptation to regard it as a revolutionary advance in technology, or at the very least, the greatest thing since sliced bread. Obviously, there are pros and cons to be voiced and, in order to find out what they are, *American Cinematographer* set

about contacting various technicians involved in the production (and film-to-tape transfer) of *LUCY MOVES TO NBC* with the objective of getting a clear and honest view of this method's possible value to the industry. What follows are the comments of these several technicians:

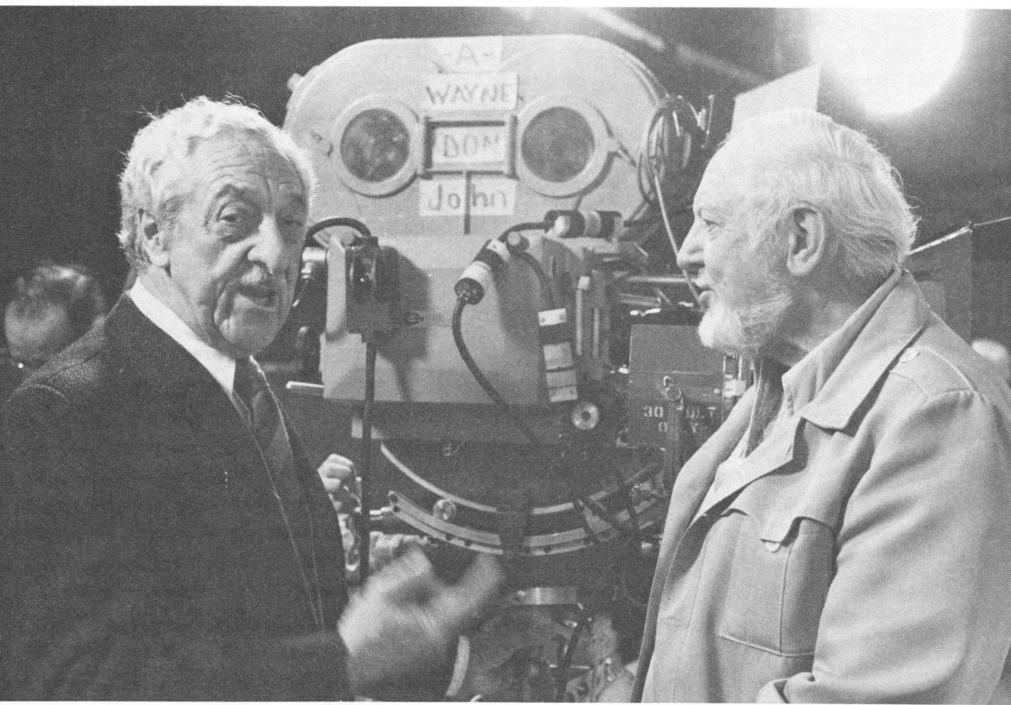
GARY MORTON, Producer

There are advantages and disadvantages to shooting film negative and transferring directly to tape, as we have done, but Lucy likes the "look" of film and so do I. On film you're working with cinematographers. I like the shading better on film. I like the lighting better. There is a certain harshness to tape, but I do like to see a taped variety show—something with Shirley MacLaine, Ann-Margret or Liza Minelli. It looks "live". They do it immediately and it's exciting.

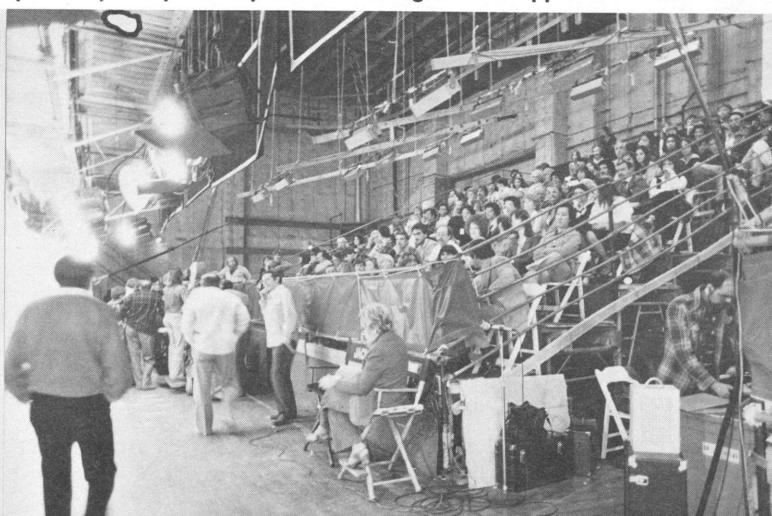
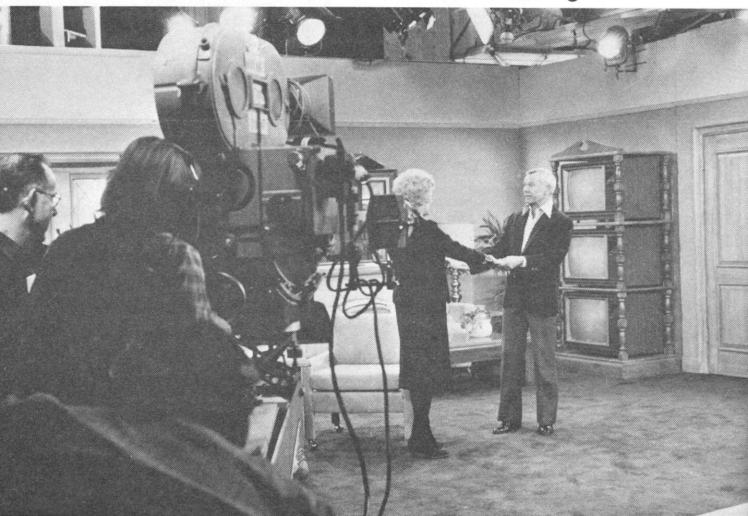
On the afternoon soap operas they do a beautiful job with tape, but I feel that the actors themselves look much better on film; the actresses look prettier. I don't like going in on a closeup of someone and seeing every little blemish of the skin. The public has always looked up to actors and actresses as though they were special and I feel that film affords you a medium for making them look that way, especially when you have a cinematographer who knows what he's doing.

But getting back to our method of going directly from processed film negative to tape—the advantage lies mainly in the editing. It's almost immediate, and the way costs are today we save money. We can edit a whole show like this in probably a day and a half by transferring to tape.

Of course, we don't take our tape and go directly to the big CMX 500 machine



(ABOVE LEFT) On the set of prime-time special, *LUCY MOVES TO NBC*, Director of Photography Lester Shorr, ASC and Director Jack Donohue discuss their filming method. (BELOW LEFT) Lucille Ball welcomes Johnny Carson to a set representing her new office at NBC. The 90-minute special was filmed over a three-day period on sound stages of the Samuel Goldwyn Studios in Hollywood. (RIGHT) Studio audience sits in bleachers on the sound stage. Overhead microphones pick up their spontaneous laughter and applause.





(LEFT) Almost all of the lighting for the show had to be mounted up high in order not to obstruct the view of the audience. For the musical number shown here one of the dancers leaped up on a desk, necessitating the installation of a ceiling piece over that area of the set (upper left) and adding to the lighting problems. (RIGHT) The three-camera film crew moves smoothly from one predetermined position to the next. Rosco Rolux diffusion over the lights provided uniformly soft lighting.

for creative editing; that would be a long, drawn-out process. Instead we use an off-line method for our creative editing. We transfer to tape and work on it reel-to-reel. So we eliminate many, many hours of work by doing the creative editing off-line on tape, rather than on film.

I feel that you save money if you have a creative editor like the one we've got, Hal Collins. Actually his name is Creative Editing. He's been in show business many, many years and he understands comedy especially well. He understands what is important, what a punch line is, how a scene should play, the fact that you must not cut to another angle when the important line is being thrown somewhere else.

If you go directly onto the big CMX machines for your preliminary editing it costs a lot of money per hour, but I'd rather pay additional money to a man like Hal Collins to do the creative edit off-line and have it done in a day and a half, color correct it and take it over to CFI for the final touches and to see how beautiful it comes out. You see it immediately. It's quick and economical and it looks super. You can do more wipes and effects on tape right in the machine. It's a computerized world today in editing. I go with innovations like that.

As for quality, I was guaranteed going in that we wouldn't go down a generation, that the result would be just as good as if it had been done entirely on film, and it is. In the end we deliver a 2-inch tape to the network for showing—but it's still basically a filmed show.

LESTER SHORR, ASC, Director of Photography

I'm not sure whether this represents a technical "first" or not—this method of transferring directly from a film negative to video tape—but it's probably the first time it's been used on such a scale, a big 90-minute special. The reason they can

do it, I'm told, is that CFI has some new equipment that can handle the negative without major problems such as dirt and scratches, whereas before it was always necessary to make a print and then transfer it to tape. They've been doing a lot of this transferring from film print to tape for transmission purposes—not because it's better, but for the convenience to the network.

In the case of the *Lucille Ball* special, the idea was to utilize the benefits of film technicians, of film creative people, of film quality. The opinion was expressed (and this won't be very popular with tape people) that the creative people who work in film produce a result of higher quality than those who work in tape, and I must agree with them, because I've seen what happens in tape studios where the creative people, the cameramen, have very little to say about what they are doing. The lighting people don't have control; they are told what to do, whereas in film you do have the opportunity of expressing yourself creatively and doing a job the way you feel it should be done, rather than being told what to do by some technical man sitting up in the booth. They tell you how to light and everything else.

The knowledge and experience that we have in film is, I feel, beneficial toward getting a higher quality result. The method which we used on this *Lucy* special represents a new marriage between film and tape, but I think the end product will benefit by having the caliber of personnel to do a better job and the quality you can get out of a good film negative. Maybe not everybody will agree, but the people who are producing this *Lucille Ball* special are willing to spend the money to get what they feel will be a better result.

There are economics to be considered also. It is felt that they can save money by going directly from negative to tape and

doing all of the effects and editing on tape—rather than editing on film, making a timed print and then transferring to tape for transmission. Maybe they're right; we'll find that out.

As far as the shooting technique is concerned, our three-camera filming operation offers definite advantages. There is a camera operator and an assistant on each camera, and we have a dolly grip. The operator is always composing and framing his picture, the assistant is always keeping it in focus, and the dolly grip is moving the camera to the positions that have been predetermined during rehearsal. Compare this method to the limitations of shooting directly on tape. There is one man who has to work the camera; he's also the same man who has to push the pedestal; he's also the same man who has to run the focus. Maybe it is a little more costly in terms of personnel to shoot it on film, but each

Continued on Page 360

Two of America's favorite clowns, Johnny Carson and Lucille Ball, clown it up between takes. Other guests on the show included Bob Hope, Donald O'Connor and Gloria DeHaven.



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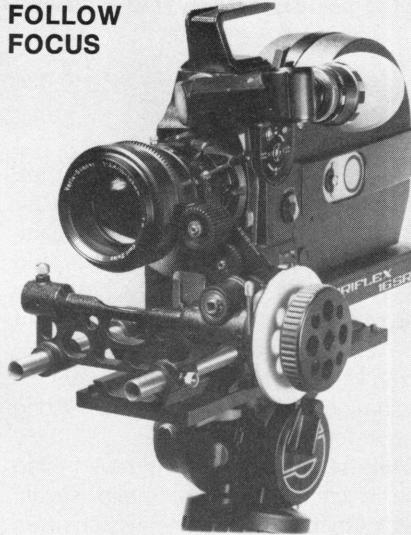
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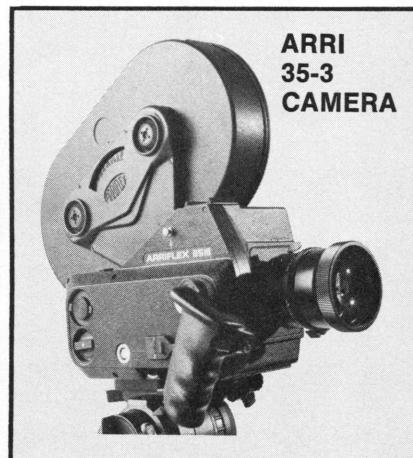


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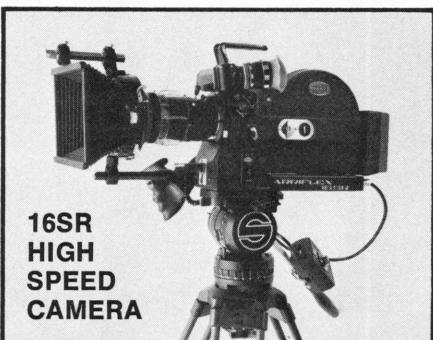


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A FILMING ADVENTURE IN THE PEOPLES REPUBLIC OF CHINA

By BOB FISHER

There are some days you never forget. It was that kind of a day for Phil Sturholm when, after a week of on-again, off-again talk about a possible 10-day trip to the People's Republic of China, the head of news photography and assistant news director for KING-TV, in Seattle, Wash., was told to pack his bags, get his vaccinations and catch a plane for Hong Kong in four hours.

While he was hustling to get everything done, a call came from Sheila Keyes, coordinator of the annual television news photography competition sponsored by the National Press Photographers Association (NPPA). "I asked her if they started the judging yet," Sturholm recalls.

She told him KING-TV had already been selected at the NPPA's Television News Photography Station of the Year. "I hadn't even considered the possibility of winning," Sturholm admits. "We didn't have any big news stories. Our entry consisted of ordinary stories of the type we cover every day."

Sturholm didn't have time to contemplate or celebrate. He was on the way to China to cover the arrival of the first cargo-carrying ship from the United States in 30 years. The station planned for him to do a series of stories about the ship which sailed from Seattle, the dele-

Phil Sturholm, head of news photography and assistant news director of KING-TV in Seattle, shown making friends with a small citizen of the Peoples Republic of China during his assignment to film the first arrival in China in 30 years of a cargo-carrying ship from the United States. His comment: "I wouldn't trade the experience for anything." (OPPOSITE PAGE) The faces of modern China are varied and interesting.

gation from the shipping company and about the people of China. There were also plans for a 30-minute special.

This isn't the kind of expenditure every station is willing to make. It cost about \$8,000 to cover the story. In addition, KING-TV had to commit Sturholm and news coanchor Jean Enersen to the project for nearly two weeks, not counting postproduction. It also had to clear 30 minutes of prime evening time for the special.

The roots of the trip go back to Chinese Vice Premier Teng Hsiao-ping's visit to Seattle in February 1979. "We didn't need a consultant to tell us the public was interested and curious," Sturholm comments. "I think every other newspaper and television news reporter in Seattle was slipping notes to the Chinese delegation requesting permission to visit."

Sturholm's first hint something serious was happening came only a week before he was actually on his way. News Director Rabun Matthews called Sturholm at home to ask for his passport number. "He told me he was compiling a list of who had current passports just in case a trip to China might be arranged," Sturholm says.

The next day the news photographer was told a China trip was a possibility. An

attorney for Lyke Shipping Company was negotiating with the Chinese for the American trade delegation to be accompanied by Enersen and Sturholm as well as a reporter from a Seattle newspaper. Nothing was definite, and no dates were set.

Sturholm started thinking about what he should carry. He had worked on overseas assignments before, and was concerned about compatible power for recharging batteries. A call to someone at the NBC Television Network who had already made the China trip gave him the information he needed to start packing.

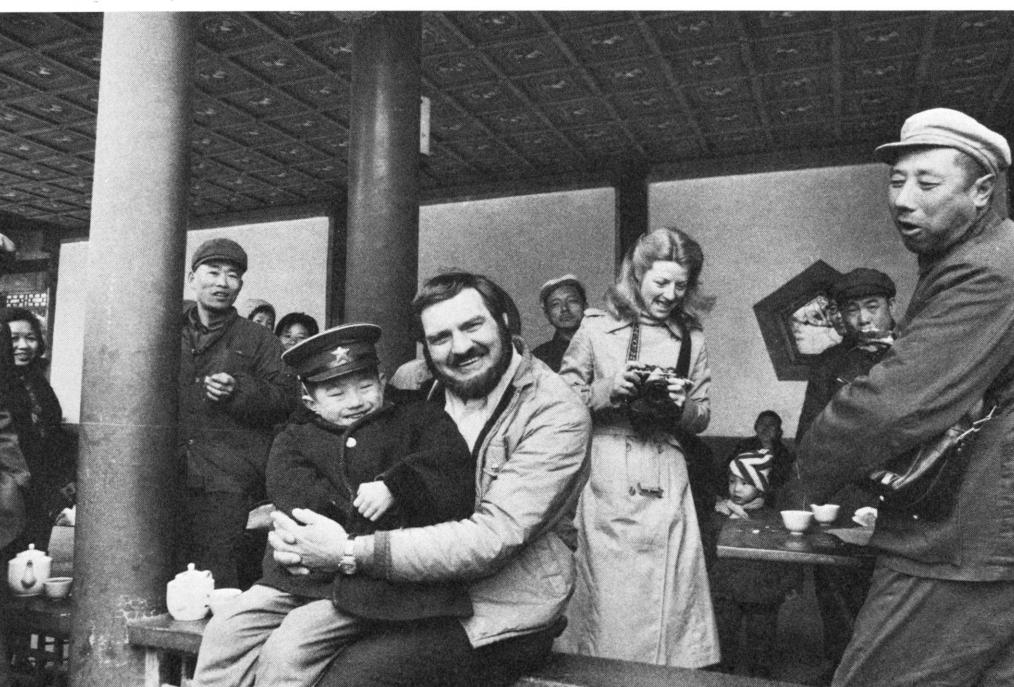
"He told me most of the outlets are 220-volt ones, and the plugs are the same as in most of Europe," Sturholm says. "The biggest problem was in Shanghai and other cities where there were historic foreign influences. In these places, there are often three different types of power outlets."

Sturholm filled 10 cases weighing around 280 pounds. They included a CP-16A camera with a 12mm-to-120mm lens, a Bell & Howell 700L camera, a Sony TC 110 cassette tape recorder, 30 400-foot rolls of pre-stripped Eastman Ektachrome video news film 7240 (tungsten), 10 400-foot rolls of pre-stripped Eastman Ektachrome video news film high speed 7250 (tungsten), 20 100-foot rolls of the 7240 stock, a tripod, four ECM and RCA conventional camera mikes, and two Electrovoice stick mikes, a portable lighting kit, battery pack belt and plug converters. He didn't carry any lighting fixtures, figuring he could buy the proper voltage bulbs in China when and as they were needed.

As it turned out, lighting was the least of his problems in China. "There was rarely time to properly light anything," he says, "and our biggest problem was the crowds we attracted. Also, most indoor locations were poorly lit but featured many windows and abundant ambient daylight. In difficult situations, it made more sense to use the high-speed film and, if necessary, 'push' it a stop or two."

The biggest problem was the bulk and weight of his gear. "Just physically moving our boxes of equipment and supplies as we traveled was a physical challenge and a bureaucratic hurdle," he says.

However, his first chore was getting there. Take-off day is etched as a blur of activity in his memory: packing and racing down to the Public Health Service for cholera and smallpox shots. "I had to talk





ments for the network, including the arrival of the ship.

"They asked how much money we were carrying," Sturholm says. Between them, the reporter and photographer had \$6,000.

It would never do, they were told. Everything in China has to be paid in cash, and while many things aren't expensive, the cost of moving equipment is considerable. "They offered to loan us another \$10,000," Sturholm says.

Shocked, he was ready to telephone Matthews to see if the station wanted to foot that kind of an investment. However, further conversation revealed that much of the high network travel costs are caused by the bulk and weight of the ENG gear they usually use there. "Their crews travel with six times the gear we had," Sturholm says.

Even so, he and Enersen did borrow 40 \$100 bills. "My wallet was almost too thick to fit into my pocket," Sturholm recalls.

There was a great deal to do in Hong Kong. Sturholm covered four stories there, and then had to arrange to transport his gear to the train station and get it on board the train to Canton, the first leg of the journey.

The first task after arriving was arranging to convert the American dollars to Chinese money. The biggest denomination is a \$10 bill. "I filled an air travel bag with Chinese dollars," he says, "and thereafter it went every place with me."

The conversion was made with the assistance of a guide assigned to Sturholm and Enersen and two newspaper reporters. One thing Sturholm recommends to photographers planning this type of trip is that they familiarize themselves with their cash requirements and plan to take care of the necessary dollar conversions in advance.

Sturholm and Enersen had their first logistical problem in Canton. They were supposed to link up with the American trade delegation on a flight to Shanghai. They had reservations but no tickets. "It took a lot of persuasion for us to get on the airplane in time for me to arrive in Shanghai to shoot film of the ship arriving," Sturholm says.

Sturholm also found it took two taxis (the cars are small) just to carry his gear, and generally these have to be reserved. "There are no taxis waiting at airports," he explains. "You reserve them to drive out from town to pick you up, and you pay a two-way fare." He also learned the overweight charge on his 10 cases of gear was about equal to the cost of an extra seat.

But a valuable lesson that was repeated throughout the trip was learned. "Travel itineraries are not flexible," he



my way through the line," Sturholm recalls. "Otherwise I never would have made the plane."

He was still at U.S. Customs an hour before his scheduled flight. Somehow he made it, and the next day he and Enersen were in Hong Kong. His first stop was at the NBC News Office, since he was scheduled to cover a couple of assign-

says. "You have to arrange in advance where you are going to be and how you are going to get there, and you must have the tickets, not just the reservations."

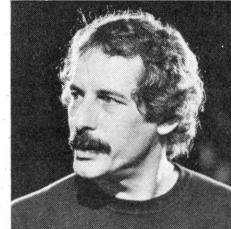
The first morning in Shanghai, he was up at 5 a.m. shooting 35mm color slides of the people in the streets through his bedroom window. Everyone else was still

Continued on Page 394



PHOTOS BY LOUIS LA ROSE, JR.

Director - Cinematographer **Lou La Rose:** Coming through when it counts.



"With a prediction of fair weather, we flew to the West Coast in February to shoot an exterior TV commercial involving two adjacent houses and featuring a neighborly window-to-window exchange. Everything was on the trucks, ready to roll, when we suddenly were hit by the worst series of storms to strike Southern California in recent years. Our schedule was tight to begin with. There was no way we could wait out the weather. Our talent had immediately following commitments, and the agency had firm air dates to be met. It could have been a disaster... but over the years I've learned who the real pros are on both coasts; the people who can be depended on to accomplish the seeming-impossible when needed. They came through for me. Within twenty four hours, we had our 'exterior', complete with adjacent houses, set up on a sound stage... necessary switches of equipment made and in place... and we started shooting right on schedule. It's the always-present possibility of such unpredictable crises that decided me long ago to deal only with the best in the business. Like Cine-Pro, for equipment. When the unexpected occurs... no matter what it may be... I can rely on Cine-Pro to come through for me, any place, any time of day or night, under any conditions. As their name implies, they're 'pro's' all the way."

Lou La Rose heads his own successful production company in New York and Hollywood, but he doesn't spend much time behind a desk. He's more likely to be found behind a camera, directing and filming a commercial for a top brand-name advertiser, or a Movie of the Week, or a prime-time special for the networks. He might be shooting in Hollywood or Detroit one week, in Hong-Kong or Paris the next; his motion picture career already has taken him more than once around the world. Lou still feels excitement at every production, from ten second spot to full-length feature. He says there's always something new to be learned, something new to be created. One thing he learned early is that the sudden unpredictable is a very real factor in filmmaking: weather, accident, illness, equipment damage, revolutions... anything. So he protects his clients by painstaking pre-production planning and reliance only on tested pros... because it's when the unexpected happens that performance counts most. We're very much aware of that at Cine-Pro. And, like Lou La Rose himself, we always come through when it counts.

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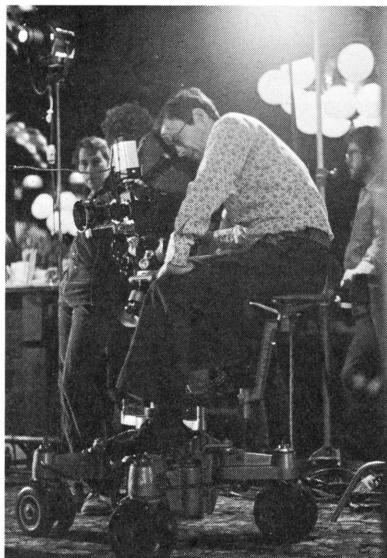


"We've been sold on the CP-16R ever since we first used it to film 'To Harness the Rain'—a PBS one-hour documentary we shot several years ago in locations all over Texas and Mexico," says Jack Landman, president of the thriving San Antonio-based production company specializing in documentary films and TV commercials.

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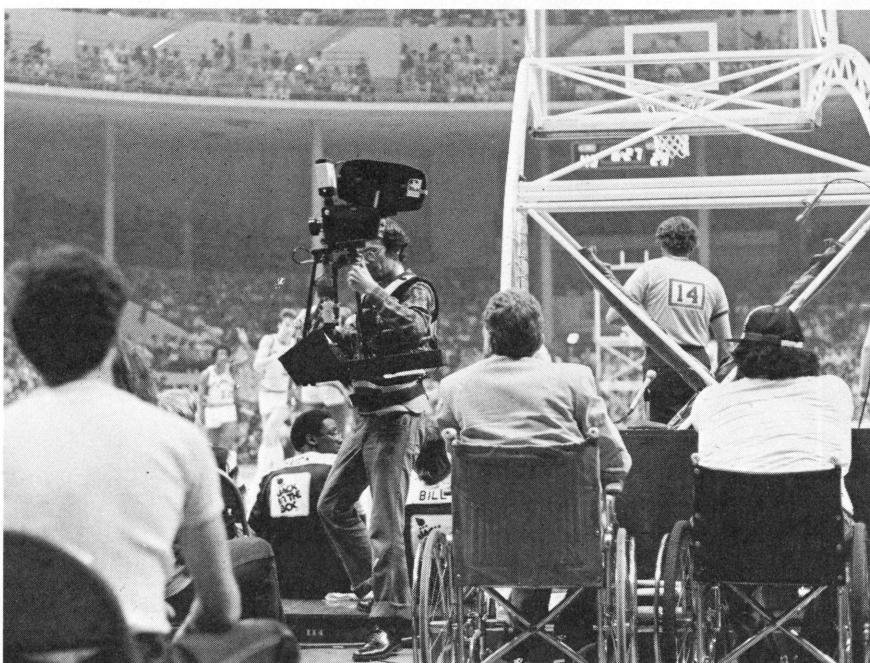


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THE BEE GEES IN CONCERT: A CINEMATIC CHALLENGE

By STEPHEN H. BURUM, ASC
and LOUIS J. HORVITZ

When the Bee Gees decided to have a television special and a major motion picture made of their recent concert tour, they took a position that proved their integrity as performers and presented us with a great challenge. Primary consideration was to be given to the concert audience, and the film crew had to work around that.

They gave us basically only one night to shoot, and that was the July 10 concert in Oakland, though some additional footage was shot the following night. That meant "do or die" as far as filming was concerned. There would be no going back for another shot at it.

That's one reason we decided to shoot from nine different camera positions. Inasmuch as the footage would be used in a major motion picture in 70mm, we opted for film. We were not satisfied with the look of tape-to-film.

Once deciding to shoot in 35mm and blow the print up to 70mm for the feature, we did some testing and decided to print the negative somewhat above scale—at about 30 to 32. That would help to insure an image with as little grain as possible. If

you try to play it down by the low end, the blacks can get a brown, grainy quality. And it gets worse as you blow it up.

In a live situation, it's important to make it as easy as possible for your crew. If one of the camera assistants had bumped the T-stop ring in the middle of a screaming concert, the mistake would have been negligible, since our setting gave us some latitude. None of these things happened, luckily, but we had to be prepared for them to happen.

Printing at that point on the scale was also necessary, we thought, because we would not be able to go back and shoot again. If the film was overexposed, we still had the range to print it down to get the look we were after. And if it were underexposed, we'd still have enough range to work with that, too.

Planning for the production started earlier than it would have for most such shoots, since the one-shot nature of the shoot required us to leave as few variables to chance as we could. The director, together with assistant director Sandy Fullerton, went to Miami before the tour even began to watch the group

rehearse its concert show.

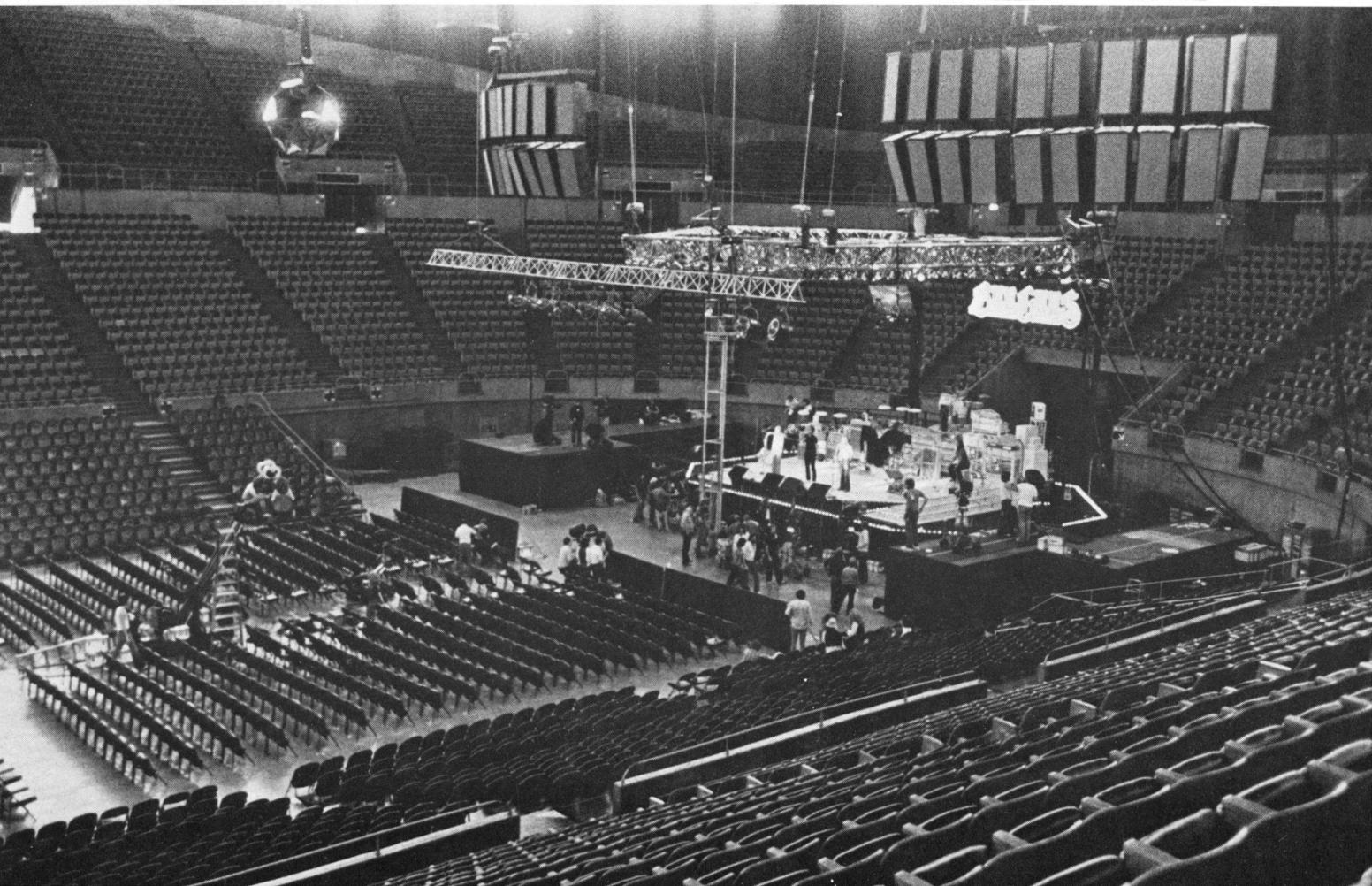
A crew followed the show to the first performance in Ft. Worth. Besides taping some "backstage" (or documentary type) footage of the Bee Gees in Ft. Worth for the TV special that was aired on NBC November 21, we watched their concert to decide what we would need to shoot their Oakland performance.

We did precise measurements of their stage set-up to determine where our cameras would later be placed. We timed each one of their musical numbers, and recorded (down to the second!) the time on the clock for each line of lyric.

Several of us attended four successive concerts in other cities to time each song and compute an average time to the second to give us as exact an idea as possible of the length of the Oakland show. Even the audience applause at the end of each number was timed. Some videotape was also shot of the Ft. Worth concert to determine what the logistics of shooting would be like at their Oakland concert.

On the tour, the Bee Gees' act included a large, fanciful set which showcased

The Oakland Convention Center, where the Bee Gees' concert was filmed. Built on either side of the stage are camera platforms to elevate side cameras so that the disco floor is shown to best advantage. Key light truss hangs out in front to get proper modeling on the Bee Gees' faces for closeups. Each camera position had two camera, so that no coverage would be lost during changeovers.





The Bee Gees view of the capacity audience from the stage. Note the paired 2K Molelipso, used as key lights for the Bee Gees. Each key was backed up with a duplicate key in case of lamp failures. (BELOW RIGHT) Diagram showing the camera positions for the Bee Gees shoot. Since each stationary camera position had two cameras, a total of 17 cameras were employed, including the one operated hand-held.

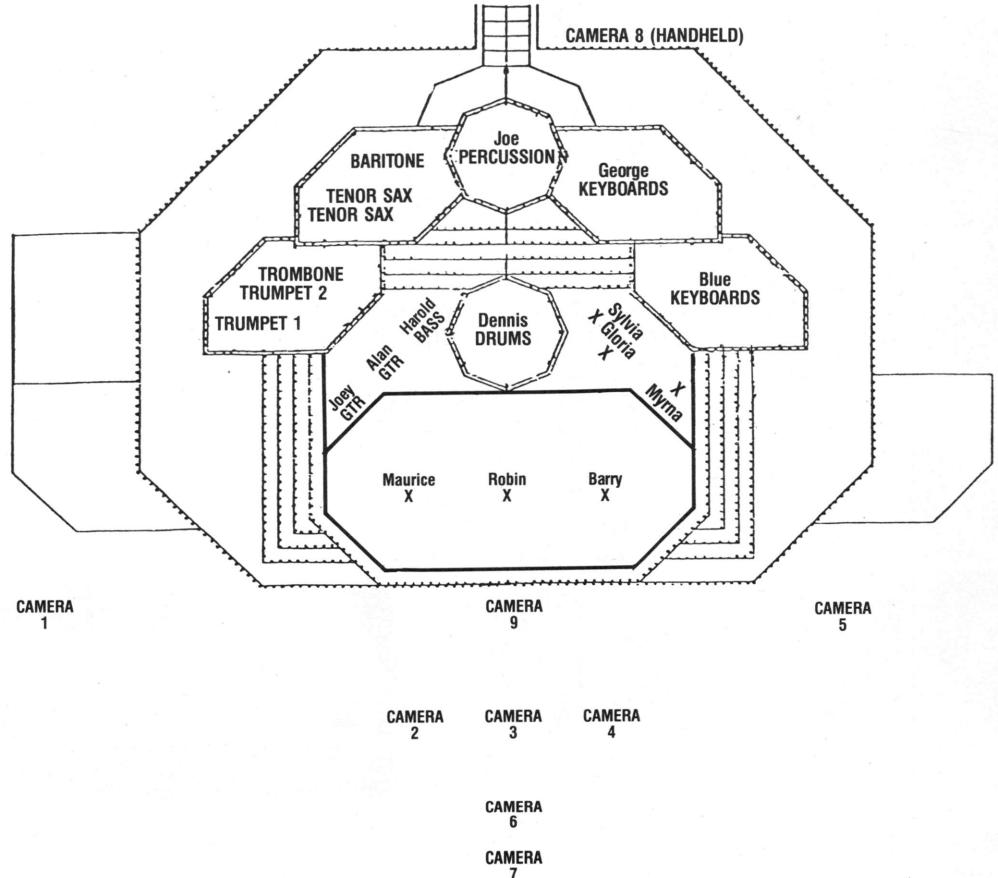
three strong visual elements: a big overhanging truss of lights made to look ornamental as well as to light the group, a huge "Bee Gees" sign in lights that hung from the rafters, and a disco dance floor under the performers with lights operated by a computer to flash various color patterns.

Our immediate task was to refocus the truss of lights of the concert company. Their lights were directly over the stage, and their beaming down on the disco floor tended to wash out the colors of the panels. We trained their lights, which were of four colors, on the band behind the Bee Gees. We also moved their big "Bee Gees" sign so that it could more easily be put in the frame.

If there was any visual idea we kept in mind for the project, it could be called a classical approach. We had great performers and we wanted clear, clean images of them. Since the existing truss of lights was directly over the performers, it could not adequately light them. So we put up our own key light truss.

There was enough light for the stage, though we could have used more illumination on the audience. But with all of our lights, cameras and sound equipment

Continued on Page 356



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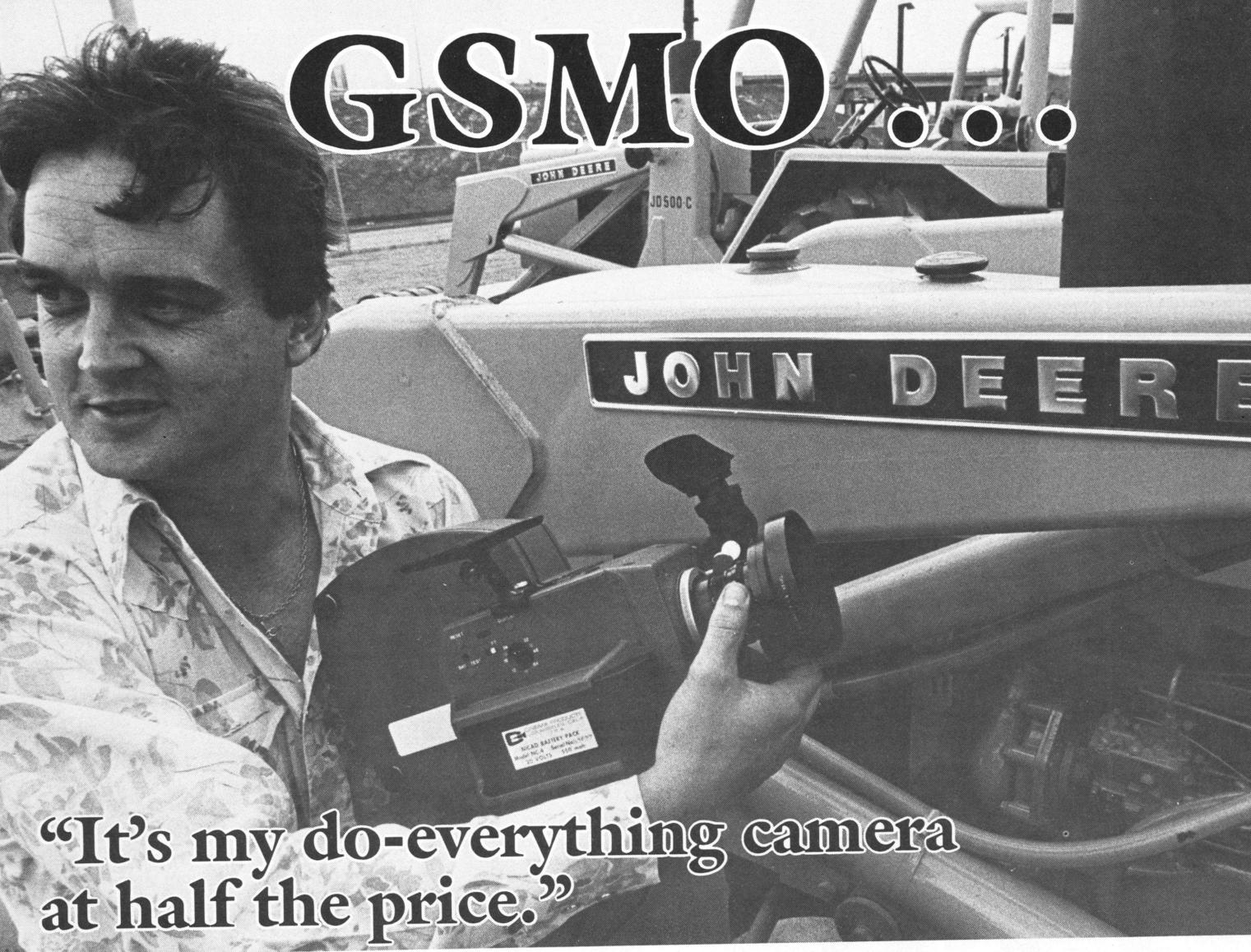
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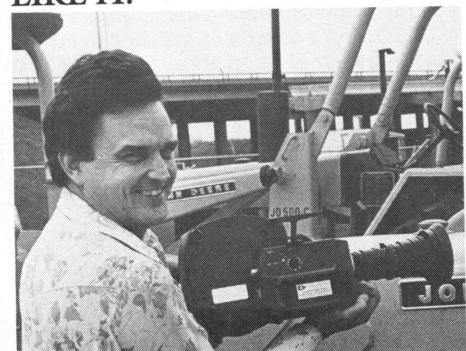
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NEW PROTECTIVE FILM COATING CUTS REMAKES 90 PERCENT

How a Michigan film production company cut print damage with the new Photogard film coating service now available from 3M

Gospel Films of Muskegon, Michigan, recently completed testing the new 3M Photogard scratch-resistant film coating on a portion of its extensive library. The result is management enthusiasm leading to coating of future releases.

The Michigan firm was started by a group of Christian businessmen in 1950 with the goal of producing films for teenagers, using contemporary situations to illustrate biblical and moral principles. Today the company has an active library

of more than 50 titles, and will add several new properties in 1980. Current emphasis includes educational films, children's films, teenage drama and various documentary and dramatic productions.

Gospel Films markets its rental library through 51 independent distributors around the U.S. and Canada, with most of the showings occurring in, or sponsored by, churches.

Gospel Films also sponsors about 40,000 free high school showings each

year, further subsidizing the program with free shipping in both directions. Approximately 15,000 penal institution screenings are also underwritten by Gospel Films annually as part of its outreach ministry.

It is safe to say that Gospel films get rough treatment in this broad spectrum of showing conditions. Scratches and frequent remakes are a way of life.

Vice President for Operations is Donald Craymer. He says that Gospel Films' special problems in film life are due to the variety of projector operators and the wide range of equipment.

"Many of our customers only show a few films a year, and run them on poorly maintained equipment with which they may not be completely familiar. As a result, we often sustain film damage in the form of scratches, torn sprockets or broken frames," he says.

Because of this, the Gospel Films staff spends considerable time cleaning and inspecting the hundreds of prints which pass through the office every week. Each of the 51 domestic distributors is also equipped with cleaning and inspecting equipment for the same purpose.

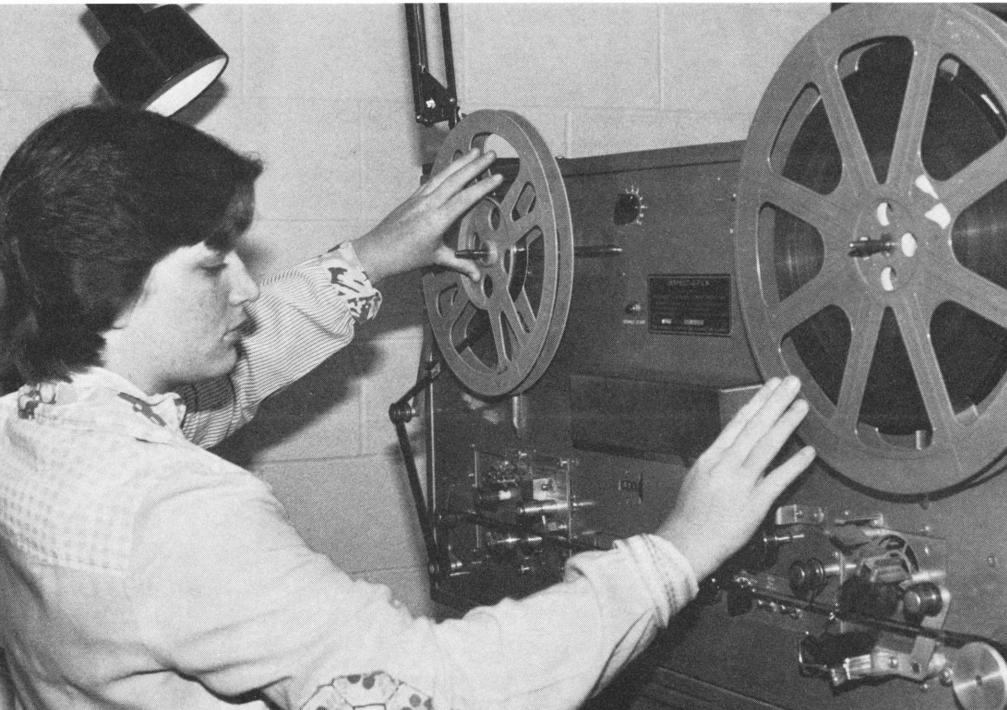
The headquarters office maintains a stock of replacement footage for the repair of damaged films, and often purchases new sections from their Detroit-based processor.

Craymer estimates that a typical print may last for 100 showings. However, occasionally a print may be returned from one of its early showings in totally ruined condition.

Several efforts have been made to reduce this costly damage to circulating prints, including packing of simply-worded guidelines on the projection and handling of each film. Also, films are sent out with treated leaders which help to remove accumulated dust and dirt from a projector's film track before the film passes through. Unfortunately, the combined effect of those steps on scratching and breakage has been minimal.

In early 1979, the company looked into a new film coating service said to dramatically reduce scratching and the dust-attracting effect of static electricity.

The new Photogard service, from 3M, involves coating the film on both sides with an optically clear 1-mil layer of protective polymer. The chemical coating, applied in the 3M New York laboratory, also resists a variety of solvents and bacteria. It's much like a pliable plastic which is precision-coated and dried instantly.



More than 100 films are inspected, cleaned and repaired every week at Gospel Films. Each of the 51 distributors uses similar equipment in the maintenance of their local libraries. (BELOW) Joe Weatherly handles the overseas distribution for the company. The films are produced in 47 languages, and used in 165 countries around the world.



with UV light, not heat, to prevent emulsion damage.

Gospel Films approved a test using 10 films which would have a controlled circulation. Craymer explains that the second half of each film was protected by the coating, and the first half was left untouched.

"The results were instantly obvious," he said. "We started with 10 new prints, and with each inspection we found additional scratches on the unprotected sections of the films. Even after a dozen or more projection cycles the coated sections were scratch-free."

3M laboratory tests show that the new coating gives film a surface hardness at least 10 times greater than untreated film. The elimination of microscopic scratches and resulting light-scatter actually improves projection quality.

The coating also adds anti-static properties to a film, thus eliminating the tendency of the material to attract dust. Gospel Films has found that the friction caused by passing a film through a projector, as well as a cleaning machine, can cause a high buildup of static charge, which causes dust attraction. In the case of cleaning, unless a nuclear static eliminator/film cleaner is continually used, the film is often no cleaner than before cleaning, due to static. Treated film does not develop such a static charge during either projection or cleaning.

Since many Gospel Films prints are used in applications where humidity and fungus growth are often a problem, the firm was pleased to note the resistance of the Photogard coating to bacterial invasion and moisture.

"While we found that the coating would

This high-speed cleaning machine removes dust, dirt and lint from films before they are returned to stock, a most important preservative step.



Gospel Films distributes rental films through 51 independent distributors in the United States and Canada, as well as from its Muskegon, Michigan headquarters. Approximately 150 copies are made of each active property for rental use.

greatly reduce film damage and loss from abrasion," Craymer explains, "we are equally concerned about breakage and sprocket damage which results from the same kind of mishandling. For that reason, we are conducting a second test using the new tougher Estar-based films. If we can reduce film breakage and tearing to the same degree as the Photogard coating reduces scratching, we will realize a dramatic lowering of damage-related costs."

Preliminary results of the Photogard/Estar film tests are promising, and Gospel Films expects to convert its future print orders to the new base material, with the 3M coating.

"In the past, we have had to routinely scrap and replace six to eight prints each week, and spend time repairing many more," says Craymer. "Based on our test results, the coating alone should cut our losses by 90 percent. Since the use and misuse of a film will receive is hard to predict, we can't be sure of payback time, but we expect that the coating will pay for itself in six months of use or less. Every repair-free showing after that will represent added savings for us and our distributors."

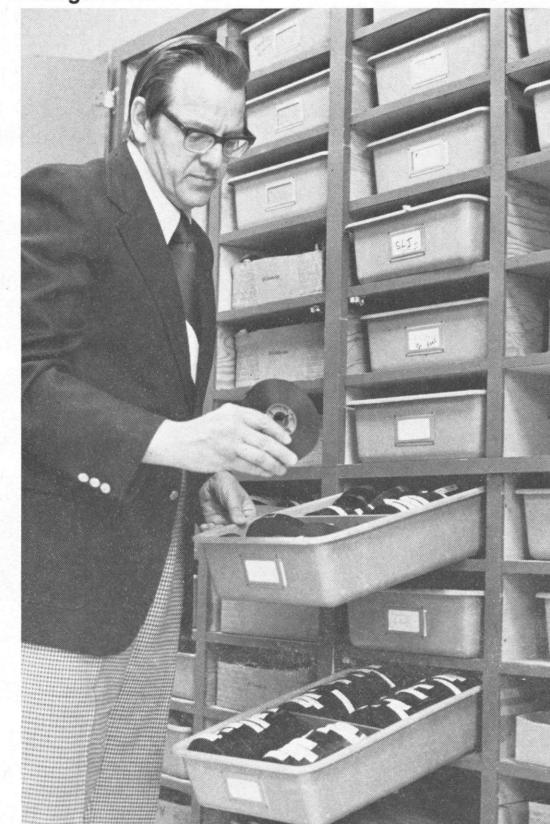
Gospel Films typically releases nine or ten new films each year, with initial print orders of 125 to 150 copies. An equivalent number of properties are dropped from the active list each year to keep the total at between 50 and 60 films.

According to Joe Weatherly, the company's vice president for overseas marketing, Gospel Films produces films in 47 languages, and distributes in 165 countries.

"Our films are seen under the most

remote and primitive conditions all over the world. Missionaries of various denominations use them to add interest and impact to their efforts," he says. "The most dramatic benefit of film coating will be to our overseas users. A damaged film can take months to ship out, repair and return to the user, particularly in some of the more remote countries. If we can cut the potential for damage to 10 percent of what it is now, we are multiplying our effectiveness to an extraordinary degree. That is even more exciting than the cost and labor savings!"

Don Craymer, Gospel Films vice president of Operations, checks replacement stock for a section of footage needed to repair a damaged film.



"When they asked me if we could do it, I said yes... and called TVC."

Pete Miranda
Mayday Productions, Inc.



Pete Miranda talks about a series of General Electric Corporate commercials his Mayday Productions is currently filming.

"When George Bragg of B.B.D.O. told me that a night sequence for G.E.'s Lupalox street lamps had to be filmed using only the light from those lamps, I was sure TVC's Chem-Tone II could do it for us.

"Fortunately my cinematographer, Pete Passas, and I have a lot of experience shooting for this process. A combination of fast lenses and a special Chem-Tone run, presided over by Dan Sandberg,

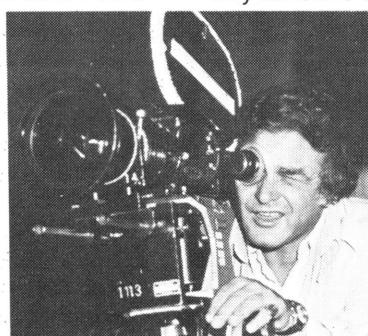
and Bernie Newson, produced dailies that were hard to believe in their clarity, resolution and superb visual qualities.

"I can't think of a harder test for film. The lights themselves give off a golden glow. General Electric was very sensitive to the fact that this glow be transmitted onto the film without color shift.

"With Chem-Tone, the skin tones are perfect, clearly reflecting the coloration of the light source.

"We literally got on film what we could see with the naked eye."

Pete Miranda
Mayday Productions, Inc.



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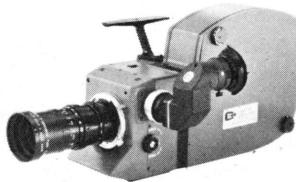
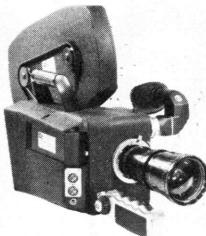
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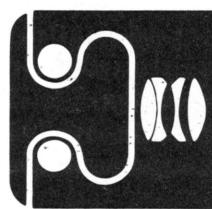
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BEE GEES' CONCERT

Continued from Page 349

added to the equipment used by the concert production, the Oakland Convention Center could not have supported any more electricity. And the fire marshall probably would not have allowed any more cables, of which there was such a conglomeration in some areas that it was almost a foot deep.

One problem with setting up our operation was that it had to be kept strictly separate from the equipment of the concert operation. As soon as the Oakland concert was over they had to pack up their equipment immediately and drive it to Seattle for a performance there the following night. That ruled out crossing our cables with theirs.

For our lighting, the colored panels of the disco floor became the ultimate measuring stick. As far as intensity, everything had to be balanced with the panels. We couldn't arbitrarily come in and say we would shoot it at 400 foot candles, or shoot it at whatever was easiest for us mechanically.

After doing some tests with a 35mm still camera, we discovered that the colored panels they had were too dark. After giving them gel samples of what we needed, they installed lighter panels that would look on film the way the dark ones did to the naked eye.

Other facets of the physical concert set-up had to be altered for us.

Our key light, as has been noted, came from the overhead truss which lit up the

Director of Photography Stephen H. Burum, ASC (wearing cap) shows Maurice Gibb a camera set-up through the view-finder.



boys. This was complemented well by colored back lights, which reflected easily off their silver suits. We had a key light for each one of the boys, and the truss contained backup lights, in case those key lights went out. The unthinkable did happen the second night, when we shot a small amount of footage, and a section of lights did blow on us. But the backup bulbs were immediately pressed into service.

For that second night of shooting, one of the four cameras we used was the now-famous LOUMA-Crane. In addition to modifying the Bee Gees' stage to accommodate it, we had to set up special lights to direct the shadow cast by the crane's 25-foot arm out of the frame.

Possibly our stickiest lighting problem was not lighting the stage, but illuminating the audience. Who wants a hot light shining on him when he's there to enjoy his favorite rock group? We knew we had to be unobtrusive, and knowing the passions of rock music fans, the last thing we wanted to do was provoke hostility from the audience.

We started by putting enough light on the audience as we dared, enough light to give the feeling of an audience. Then we put in extra lights, and we were very careful about turning them on.

There were times NOT to turn them on, like when Barry Gibb was in a dramatic solo. The whole stage was dark and there was only a spotlight on him. We'd usually wait until the time, for example, when during one number they shined a group of strobe lights out into the audience to simulate a disco. We turned our lights on then, and hoped they figured it was part of the concert show. And when there was a lot of applause at the end of a song, you can usually get away with it.

Other aspects of the show were modified to help us in lighting. For example, some of the Bee Gees' stage sound equipment was mirrored and had to be covered over with black cloth.

Once we modified their set to be compatible with our cameras and knew what we wanted to shoot, we began planning the mechanics of the shoot down to the smallest detail. Leaving nothing to chance, we hired a small army, each member having his own narrow task. We estimate that well over 3,000 people were involved in the making of this film.

A total of 17 cameras would be needed for a total of nine camera positions: Three cameras immediately in front of the stage, two further back down the aisle, and one each on the left and right sides of the stage. And each one of these cameras, we decided, would have a backup camera. In addition, we included a remote-control camera high in the rafters for long, overhead shots, a handheld

camera operated by a roving cameraman, and a special back-up Pan-Arriflex.

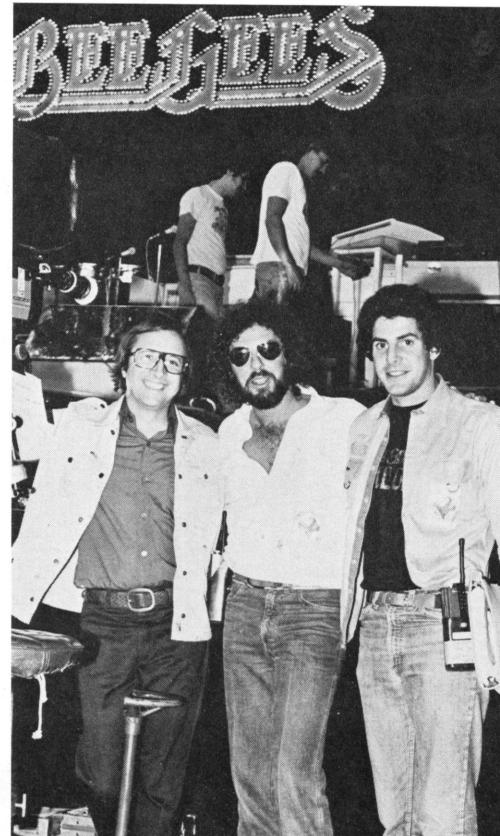
We didn't feel secure simply calling up Panavision and putting 17 cameras on reserve. The cameras were needed in July, which is the beginning of the busy shooting season, and we could take no chances on not having enough of the right equipment available. We sent Panavision a large check two months ahead of time as a deposit to make sure they knew we meant business.

Then we sent three senior camera assistants to Panavision, where for two weeks they tested cameras and lenses. It was crucial that there would be no color shifts from camera to camera, which can happen because some lenses are very warm and some are very cool. So our technicians, while testing, kept the lenses and camera bodies together, and kept testing until they found enough cameras that were alike.

After the three senior assistants finished the test, they were charged with distributing the cameras to the other crews in Oakland. Since they knew the cameras best, having them do that job was better than putting it on the shoulders of 15 first assistants.

Originally we had wanted all Panaflexes, but not that many were available. We had to go with a mix of Panaflexes and Panaflex-Xs. Because the Panaflexes have a viewfinder that tilts up and down, we gave them to those operating the cameras from low positions. For those on raised platforms we let them have Panaflex-Xs with straight viewfinders. It's hard to have your eye in a

(Left to right:) Stephen H. Burum, ASC, Director of Photography, Louis J. Horvitz, Director; and Roger Birnbaum, Producer of the Bee Gees film.



camera for two hours and have your body wracked in some weird position, because your body will cramp up and you won't be able to make smooth moves.

To handle the sheer logistics of getting the 17 cameras and the film (we shot more than 100,000 feet) we hired someone called a Camera Equipment Coordinator. When you have a shoot this big, you need someone who can coordinate with Panavision on scheduling projection times for the test shoot, getting the film from Panavision to Technicolor—details such as that. If the senior assistants had to do that they would have been on the phone all day and they would never have had time to check out the camera equipment.

No aspect of camera operation was left to chance during the concert. Each camera team had extra batteries. We even got extra motorboards for the cameras, which proved to be a very precognitive move, as one of the camera's motorboards gave out during the first roll of film. It became a simple matter of having a standby technician insert another motorboard.

Seven of the camera positions were manned by three to four people each. There was an operator assisted by a technician and a first assistant. Magazines with one thousand feet of film were used in most cameras, and as soon as one camera ran out of film, another was loaded and ready to roll right beside it. Another group of people did nothing but ferry exposed magazines to a specifically designed truck outside the auditorium in which six darkrooms had been built.

All of the crew was connected together by a communications system with headsets. Even the people in our equipment truck outside the auditorium were hooked into it, so that if a piece of our equipment failed they would know immediately and send us a replacement part in a hurry.

Eleck dollies were used because they are easy for sliding a camera if the operator had to do it himself. And even though the operator had plenty of manpower at his disposal, again we didn't want to leave anything to chance.

We got some excellent footage, but only after making some very basic compromises with the concert production. The best place to put cameras to shoot stage performers is at the subject's eye level, and it's even better to have a crane directly in front of the group.

That simply was not allowed to us. Our three cameras directly in front of the Bee Gees were several feet below them, so as not to spoil the view of the concert audience. All of our 17 cameras had to remain out of sight of each other, since it

would destroy some theatrical drama to have Barry Gibb crooning away with a cameraman changing a magazine in the background. To make the cameras blend in with the scenery, the magazines were covered with black. The bottom line was that a lot of good shots had to be sacrificed.

One aspect of the concert that made our job easier was the very precise, measured performance of the group. No Mick Jagger-type jumping around, no departures from the concert program. **Continued on Page 404**

RSO THE BEE GEES FILM CAMERA/CREW REQUIREMENTS TUES. 7-10-79

CAMERA NO. BODY COLOR	LENS W/CAMERA	CAMERA POSITION	LENS REQUIRED	MAGAZINE	ADDITIONAL EQUIPMENT
#9 Panaflex X Grey	10-1 zoom	1/1	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#10 Panaflex X Red/Green	10-1 zoom	1/2	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#2 Panaflex Lime Green	10-1 zoom 35, 50, 75, 100 1000mm	2/1	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#4 Panaflex Blue	10-1 zoom 35, 50, 75, 100	2/2	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#13 Panaflex Brown Yellow	5-1 zoom 10-1 zoom 35, 50, 75, 100 300mm	3/1	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#14 Panaflex Orange Blue	10-1 zoom	3/2	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#6 Panaflex Orange	10-1 zoom 20T3 35, 50, 75, 100	4/1	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#1 Panaflex Red	10-1 + 2x 5-1 zoom 14, 16, 20T1.3, 24, 29, T1.2, 35, 50, 75, 100 150	4/2	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#3 Panaflex X Yellow	10-1 zoom	5/1	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#7 Panaflex X Drk. Green	10-1 zoom	5/2	10-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#5 Panaflex X Lite Blue	5-1 zoom	6/1	5-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#8 Panaflex X Brown	5-1 zoom	6/2	5-1 zoom	1000	O'Connor Eleck 2-Bat. Blks
#11 Panaflex X Red/Yellow	6-1 zoom	7/1	6-1 zoom	1000	Panahead crane ladder 2-Bat. Blks
#12 Panaflex X Blue Lime Green	6-1 zoom	7/2	6-1 zoom	1000	Panahead crane ladder 2-Bat. Blks
#17 Arri BL Lite Blue White	9.8 16, 24, 32, 50, 85 (Distagon) 18, 25, 35, 50, 85 (Ziess) 6-1 zoom	8 Handheld	All Primes on standby	10-400	2 Sets Sticks 2-Bat. Belts 2-Bat. Blks 1-Chng. Bag 2-O'Connors
#16 Arri 2C Lite Gr. Drk. Gr.	9.8mm 16mm	9 Truss	9.8mm 16mm	1-400	Remote Switch 90° angle bracket Clamps
#15 Pan Arri Lite Blue Drk. Blue	5-1 zoom 10-1 zoom 14, 16, 20, 24, 29 35, 50, 75, 100 150	Back-up Camera		2-400s	

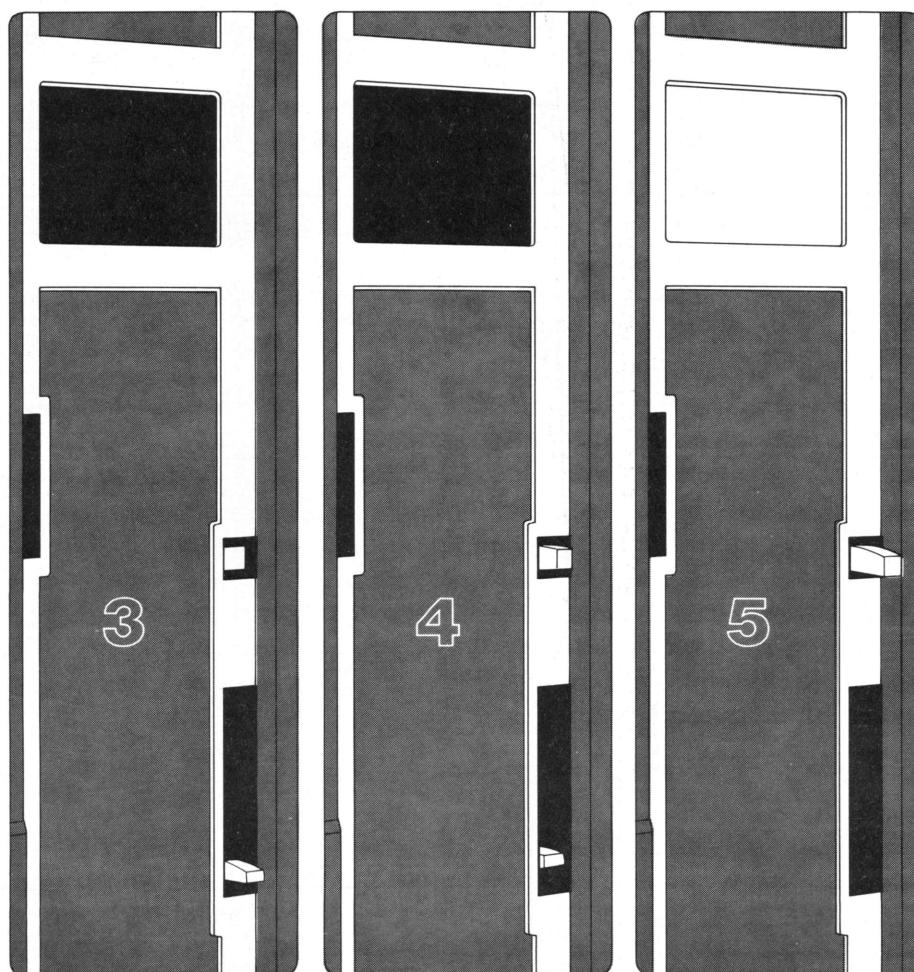


Continuous film control: five stages.

1. Shutter has just closed. Registration-pin has begun retracting, claw has engaged the film.
2. Claw is halfway through its pulldown. Registration-pin is fully retracted.
3. As claw nears end of pulldown, registration-pin begins to emerge again.
4. Claw begins retraction. Registration-pin protrudes to move the film to its final exposure position and hold it there.
5. No movement. Claw is fully retracted. Registration-pin is fully out and motionless. Shutter has now opened for exposure.

The 16SR registration pin:

What seems to be an unsharp lens is sometimes a slightly unsteady image.



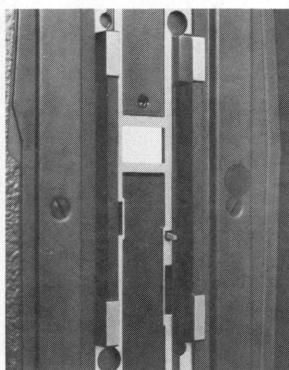
At 24 fps, a 30 minute film contains 43,200 photographs. Each of them should be exposed on film that isn't moving. In frames that are positioned *just so*, one after the other.

A registration-pin movement costs more to build and is harder to make silent. Why do we insist on one?

Of the moving parts in a 16SR movement, 40% have to do with the registration-pin. Clearly, we *must* think it important. And ARRI has been making cameras since 1917, so we've had time to think about it.

Between exposures, the claw must move the film a relatively large distance, fast. During exposure, the claw must hasten back up to do it again. The 16SR registration-

Technology of the 16SR/One of a Series:



Interaction tolerance: 0.0004 inch.

pin positions the film, slowly, and holds it there during the exposure, motionless.

These are distinct functions. In the 16SR, therefore, claw and pin have independent control mechanisms. (Nevertheless, their interaction tolerance is 0.0004 inch.) The pin is shaped like an optical printer sprocket. And since it moves the film to its final exposure position, the relationship of the image to the sprocket-hole is identical every time.

The heart of the matter: Control at every step.

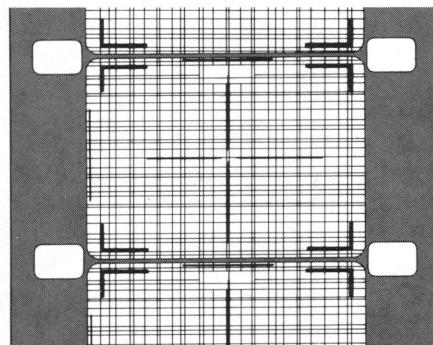
Either the claw or the pin is engaged in a film perforation at all times. At every stage of the pulldown, positioning and exposure cycle, the film is under positive control.



How sharp is that lens? It can depend on the camera.

Before image unsteadiness gets bad enough to be per-

ceived as such, it can appear to be lack of sharpness. A registration-pin movement costs more money. So does a first-quality lens. They go together. It would be illogical to save money by matching an expensive lens with a pinless camera.

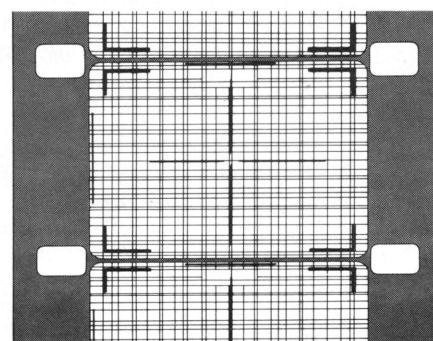


Double exposure steadiness test:

Each new 16SR is tested by running a length of film through it. As part of the test, we shoot a grid-pattern target. After the first exposure, we offset the target slightly, wind the film back and re-shoot (see illustration above).

When you buy a 16SR, you get the test film for that camera.

We project each camera's test footage. If film registration weren't perfect, the superimposed second grid image would be seen to move on the screen in relation to the first. *But it doesn't.* When you buy a 16SR, you get a small blue box containing that piece of test film.



Is it always necessary?

Movies have been made without a registration-pin, of course. But the pin can improve image quality from good to excellent. And it provides assurance that the camera will perform under adverse conditions and for a very long time.

No; just sometimes.

If you have to shoot in tropical or freezing weather, or in high humidity. If you're under extra G force loads (in a car or plane). If the camera is getting on in years, or hasn't been overhauled lately. If you have to super titles, or shoot at high speed. If the rawstock isn't fresh out of the refrigerator. That's when the registration-pin earns its keep.



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FILM NEGATIVE TO TAPE

Continued from Page 341

scene is always composed properly by the operator, each camera movement is smooth and precise, and each scene is always in focus. With three pieces of film moving through the cameras at all times, the editor can make his choices carefully later. He isn't locked into the spur-of-the-moment cutting that must be done during a taped show. Our operation goes back to the quality of film and the high standards of the people who work in film.

There are also significant mechanical advantages to shooting on film. Compared to video equipment, our cameras are very mobile and flexible. We use crystal-sync, so there are no cables to drag. We have a special battery pack that rides on the dolly to give us the power for the camera and also for the eye lights and soft lights that we have mounted on the camera. We have a remote control unit. We have direct communication with the Camera Coordinator, and this is all cordless; it's all radio-miked for the crew.

The small lights which we have mounted on the camera are helpful because in lighting for television you can't always place the lights where you want them, especially when you are doing a show in front of a studio audience. It's necessary in cases like that to get the lights high enough so that they won't block the view. The studio audience has to be able to see the action and if you set your lights lower they will interfere with that. Part of the technique of a three-camera operation is to let the audience see the action without having to view it on a monitor. The people in the audience want to be part of it. They feed the performers and the performers respond to what the audience gives them. You get better performances that way, more natural laughs and applause.

One of the things we were able to do on this show was take advantage of Rosco Rolux diffusion, which I applied on all of the lights to create a very soft effect. There were no hard shadows of any kind. Whatever shadows remained were so soft that they were hardly noticeable. This meant that, by using a zoom lens, we could zoom from a very wide angle up into a closeup and get a nicely diffused effect. On zoom lenses you can't use the kind of diffusion filters that we use on prime lenses, so I had to resort to the next best thing, which was to make the lighting very soft—and it seemed to do the job. Not only did it soften the quality of light on the performers, but it enabled us to move our cameras further into the set in order to get in close, and



"Best Boy" (or should we say "Best Person"?) Donna Hall makes a critical adjustment to a light, while Cinematographer Shorr checks its effect on the set. Small eye lights and soft lights mounted on the three film cameras helped model the lighting for close shots. Ample illumination made pushing of the negative unnecessary.

even though we would get into the shadow of a light now and then, it didn't pick up. It wasn't noticed on camera because it was so subtle. The same was true of mike shadows or any other kind of shadows. We were using the Rolux diffusion which eliminates shadows completely and favors the performers.

In shooting with video cameras they can't use this heavy kind of diffusion on their lights because they have to maintain a considerable depth of field, which calls for a higher key of light than we use with film. The Rolux would cut down their intensity too much. All they could use on their lights would be something like spun glass, but that doesn't do the same thing.

On film we can adjust our exposure to compensate for heavy diffusion on the lights and still hold sharp focus. I can work with a lower key of light and, if

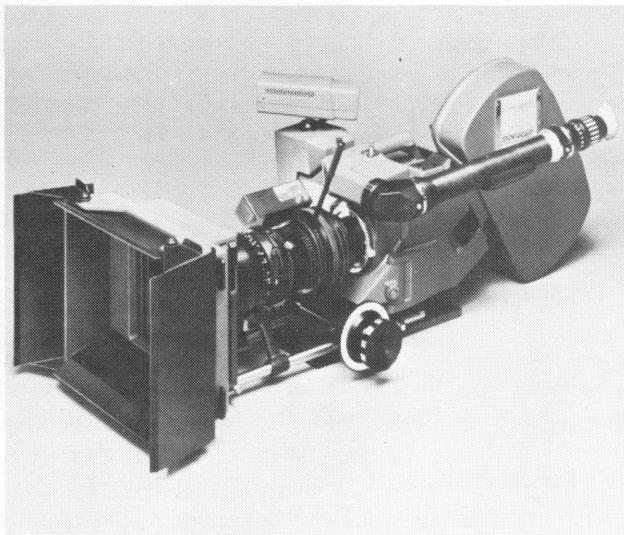
necessary, push the film a stop or even two stops. In general practice, however, we don't have to push the film.

This new method of shooting with multiple cameras on film and then transferring the negative directly to tape for post-production may very well prove to be the way to go. I try to keep up with everything that's new, everything that will help us do our job better and that is easier and more economical for the producers. We try to do whatever we can to keep them in business.

In further exploration of the pros and cons of transferring film negative directly to video tape for purposes of telecasting as was done on the *Lucille Ball* special, *LUCY MOVES TO NBC*, American Cinematographer arranged an interview with the three technicians most directly responsible for making the transfers and *Continued on Page 364*

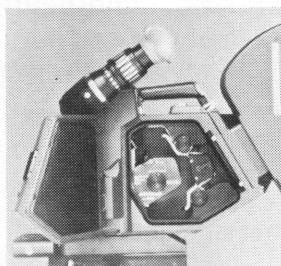
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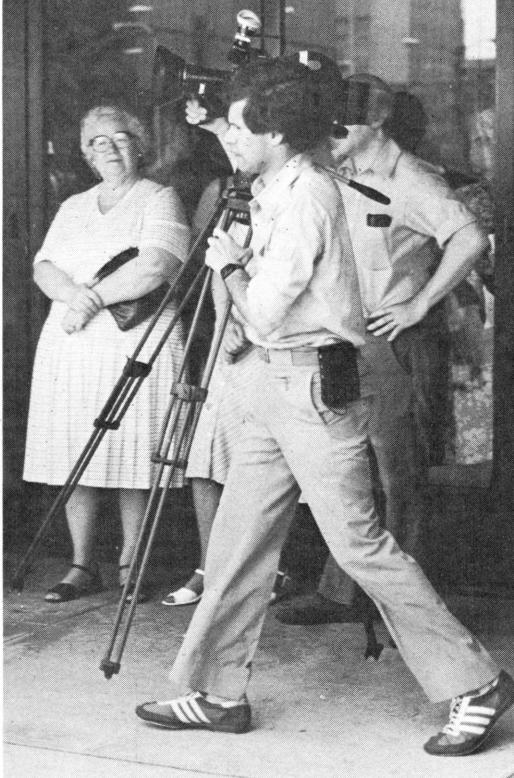
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Shooting a documentary: quick moves. Camera rests comfortably on Mr. Fauer's shoulder as he hand-holds with tripod attached.

Hand-holding with the tripod on the camera! Jon Fauer talks about working with a Sachtler:

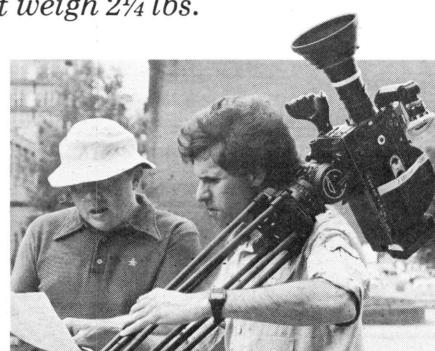
The effect on documentary style of a 6 3/4 lb. fluid head and carbon-fiber 58 inch legs that weigh 2 1/4 lbs.

When the action isn't going to repeat and it's happening fast, you often have to go hand-held," says documentary cameraman Jon Fauer.

"But you give up a lot, of course. No steady long-lens closeups. No throwing the background out. Even staying wide, the image isn't really rock steady on a big screen. All these things you sacrifice for speed."

"I bought the Sachtler because of its incredible light weight with the carbon-fiber legs. After I began using it, I found I could make quick moves to a new angle carrying tripod and camera together. The Sachtler was the first tripod that didn't slow me down."

"The quick-release plate lets me go hand-held fast—and with the ARRI SR on my



"We spend half the time carrying the equipment around," says Jon Fauer. "Weight is important."

shoulder, the plate doesn't dig into me. I find I can put the camera back onto the Sachtler faster than I could with any other tripod."

"Using my SR on other fluid heads, I was always fighting the counterbalance spring. Too much or too little. The Sachtler's adjustable spring gives me perfect neutral balance—with my 400mm and my Zeiss Superspeeds."

"The SR's tripod socket is fairly far forward on the base, and the Sachtler's quick-release plate is small. That's why it doesn't dig into my shoulder," says Mr. Fauer.

"The head is small, too. And this led to something I wouldn't have believed. In the heat of the moment, I found myself needing a hand-held shot fast. So I began hand-holding—with the tripod still attached! I forgot it was on there!"

Who took the photos on this page—and why is that significant?

On this job, there was a two-man crew: Jon Fauer, cameraman, and his assistant, Jeff Laszlo. Usually, the assistant has his hands full carrying the tripod around two steps behind the cameraman. As you can see, Mr. Fauer carried camera and tripod himself. The pictures were taken by Mr. Laszlo.

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Listed alphabetically below
are some ARRI dealers in
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inspect Sachtler tripods.

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INDUSTRY ACTIVITIES

WM. FRAKER, ASC, TO CONDUCT SUMMER WORKSHOP IN MAINE

The Maine Photographic Workshop has announced that it will host two one-week courses in cinematography and lighting this coming summer. Both workshops will be conducted by a leading A.S.C. cinematographer who will work with students on visual and technical problems and assignments on a variety of locations. William Fraker, ASC, Oscar winner and president of the A.S.C., will conduct the summer's second workshop scheduled for the week of August 31 through September 7. The summer's first workshop is scheduled for ten-days, beginning June 7. The prominent cinematographer who will lead this workshop will be announced in early spring.

Each summer The Maine Photographic Workshop, a major photographic learning center located in the small harbor village of Rockport, Maine, conducts over eighty photographic courses, including a series in cinematography. In recent years such recognized cameramen as Conrad Hall, Vilmos Zsigmond, and Laszlo Kovacs (all ASC) have led these workshops.

This summer's workshop series, as in past years, is designed for working professionals and advanced film students. The material covered in daily lectures, discussions, and field assignments include camera and lighting equipment, exposure tests, lab processing, density and saturation controls through flashing and pushing, defusion and filtration. Lighting techniques and the relationship between director and cameraman are also covered, as are attitudes, motivation, careers, and visual taste. The real work takes place every afternoon and evening when students tackle tough assignments covering interior and exterior lighting, street lighting, and lighting to create specific moods and periods. Framing, composition, camera placement and movement, and visual problem solving are covered through actual experience on the set. Five camera crews work throughout the week testing film stock, filtration and diffusion materials, lighting techniques, and their own abilities to solve visual and technical problems with their imaginations and the tools at hand.

Each morning there is a screening to review the "footage" shot the previous day, followed by a critique by the guest cinematographer. A short technical discussion follows, ending with the day's assignments. Throughout the week MPW presents a retrospective of the major films photographed by the guest,

followed by a question period. There's lots of hard work, an opportunity to screen each other's films, ask questions, and occasionally the opportunity to relax over a lobster dinner on the harbor and discuss jobs, careers, equipment and films with other filmmakers from around the world.

A third workshop is in the planning stage for next January (1981) to be held at the Samuelson production facilities in London, England.

These workshops are supported through equipment grants from Arriflex, LTM Lighting, Rosco, TVC and Technicolor Labs.

Enrollment is limited to sixty working professionals and is always full, so early application is necessary. Total cost is \$350. Housing and meals are available through the Workshop. For complete information call or write: The Maine Photographic Workshop, Rockport, ME 04856. Phone: (207) 236-8581. Limited financial aid is available.

In addition to the aforementioned events, the Maine Photographic Workshop will offer a comprehensive five-day workshop this summer for working cameramen who wish to become expert in the use of the Steadicam and the Panaglide. Garrett Brown, who invented the Steadicam, will conduct the workshop, which will be held in Rockport, Maine June 16 through 20.

The workshop will include demonstrations, lectures, and detailed instruction in the use, care, techniques, maintenance and potential of the Steadicam, but the real purpose of the course is to give operators actual "in harness" experience with the machine.

The workshop is strictly for advanced operators. Those wishing to attend will please submit a resume of past experience as an operator, together with their application and deposit. Cost for the five days, equipment use, instruction, evening films, and all printed materials is \$400. Housing and meals are additional and available through MPW.

For an application and more information about this and other filmmaking workshops, write or call: The Maine Photographic Workshop, Rockport, Maine 04856. Phone: (207) 236-8581. ■

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AMERICAN CINEMATOGRAPHER

FILM NEGATIVE TO TAPE

Continued from Page 360

assisting in post-production handling of the video tape. They were: Tom Bruehl, Vice President and General Manager of the Video Tape Department at Consolidated Film Industries; John Koch, Supervisor of the CFI Telecine Department; and Gary Thompson, CFI Director of Engineering.

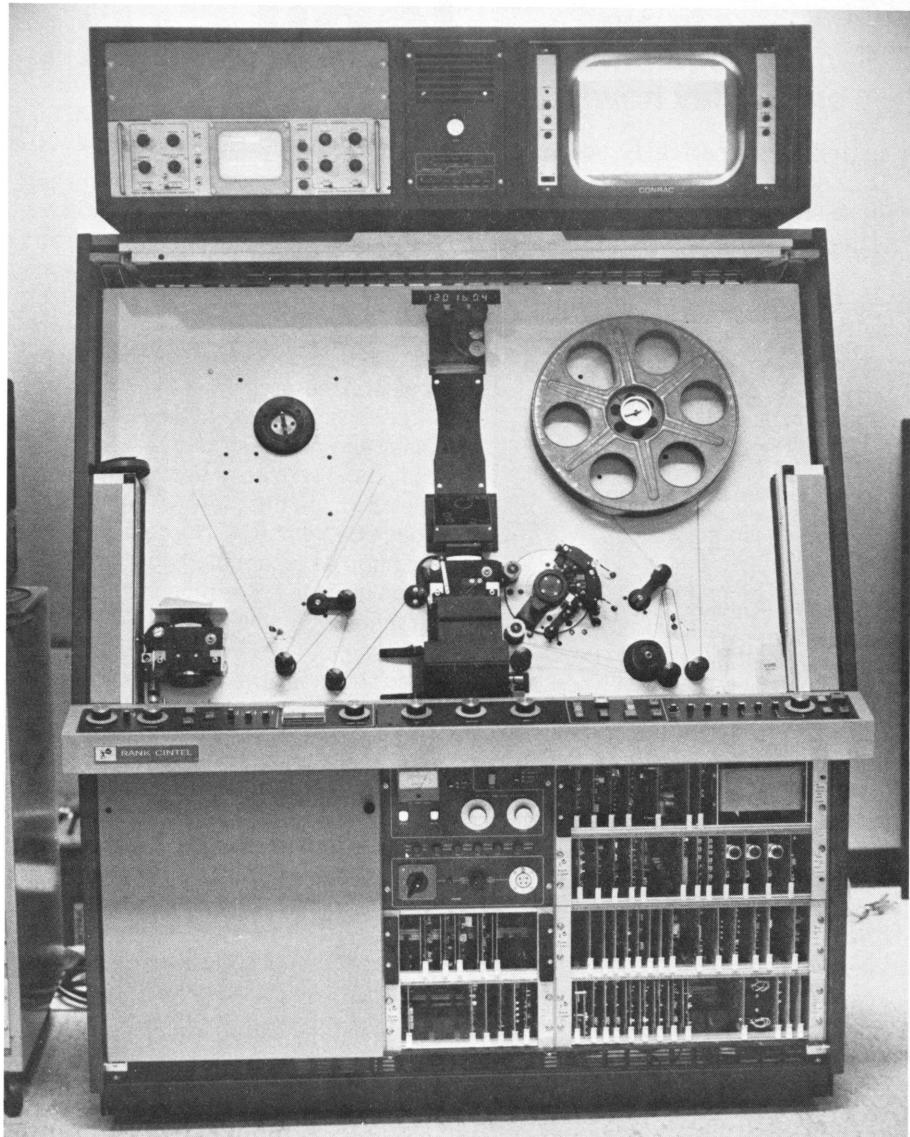
What follows includes individual statements by each of these gentlemen, plus excerpts from a question and answer session involving all three of them:

TOM BRUEHL, General Manager, CFI Video Tape Department

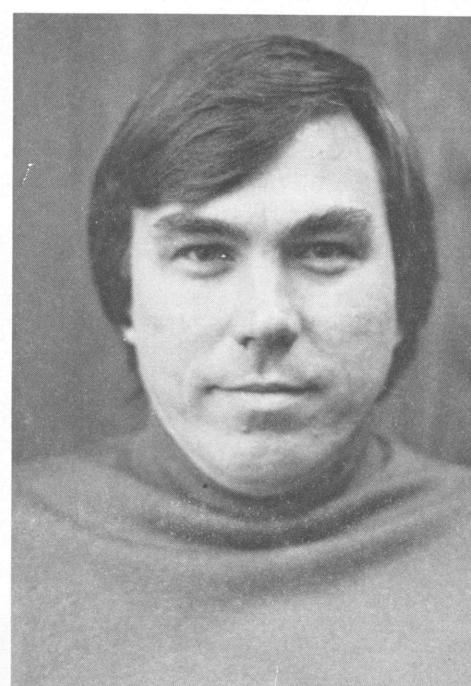
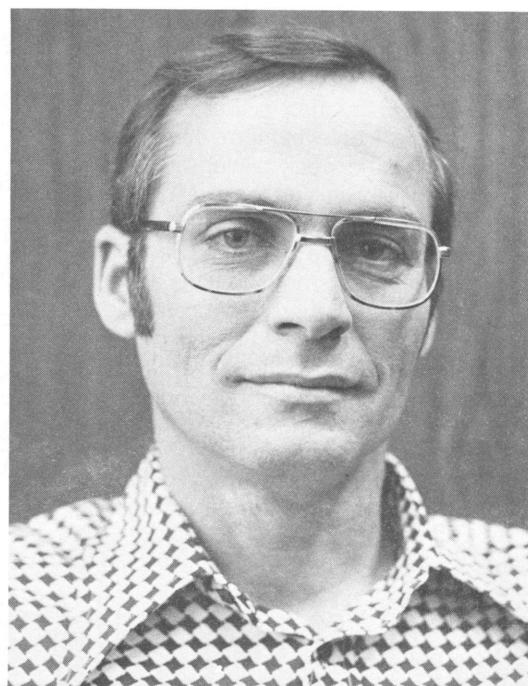
My first exposure to the Lucille Ball project came when one of our sales people who had been talking to Gary Morton came back and indicated that they were interested in transferring the original negative to video tape. He wanted to know what steps we would employ in handling the project and if we would make a bid based upon the utilization of certain equipment and estimate what it would take to complete the show. The bid involved procedures different from what we were used to because we had to anticipate some laboratory services, some of the intermediate film steps, and we had to conform sound tracks and work with uncut negative. We knew there were a lot of unanswered questions, so we had to structure the bid on somewhat of an experimental basis. Fortunately, it turned out to be a fair price for the production company and a fair rate of return for us. We happened to hit it right the first time out.

Although we had supplied them with
Continued on Page 385

Three of the people most directly concerned with the color-negative-to-film transfer of the LUCY MOVES TO NBC footage. (Left to right) Tom Bruehl, General Manager and Vice President, Consolidated Film Industries Video Tape Department; John Koch, Supervisor, CFI Telecine Department; and Gary Thompson, CFI Director of Engineering. Having no precedents to guide them, they had to feel their way on this project, but are more than pleased with the results. They do, however, recognize certain problems which they hope to overcome in the near future.



The Rank Cintel Flying Spot Scanner was the key piece of equipment involved in the transfer of the 35mm color negative to video tape. Its unique type of film transport system makes it possible to handle negative, which was not feasible before. Unlike conventional projectors that have some sort of sprocket-driven intermittent movement, the Rank machine has a continuous motion transport, with no driven sprockets. This makes it very gentle with film. Since the film does not come into contact with any abrasive surfaces, there was no problem with scratches or torn perforations.



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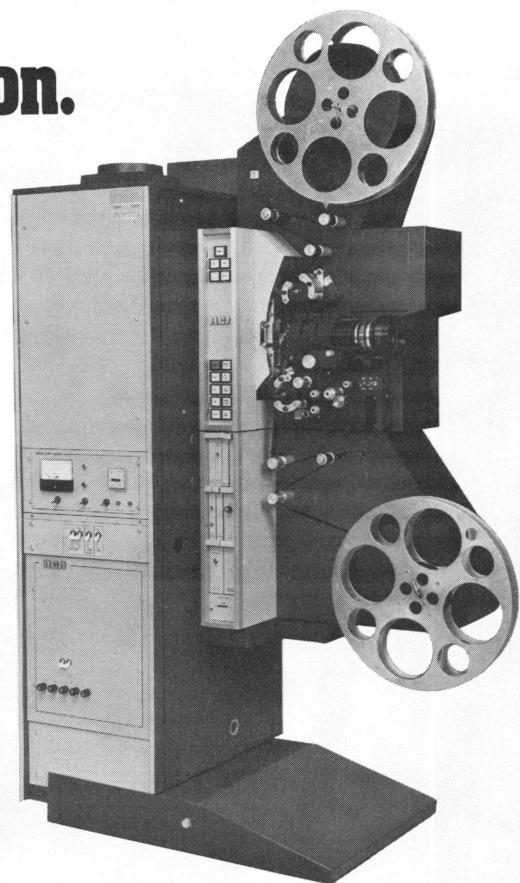
The FR-35DP adds a new degree of flexibility and efficiency to film post-production operations, with features such as these:

- New Xenon illumination system provides maximum reflection, excellent screen intensity and light distribution (750 W to 4500 W systems available).
- Operates at cine (24 or 25 fps) or 6 X cine speed, forward or reverse.
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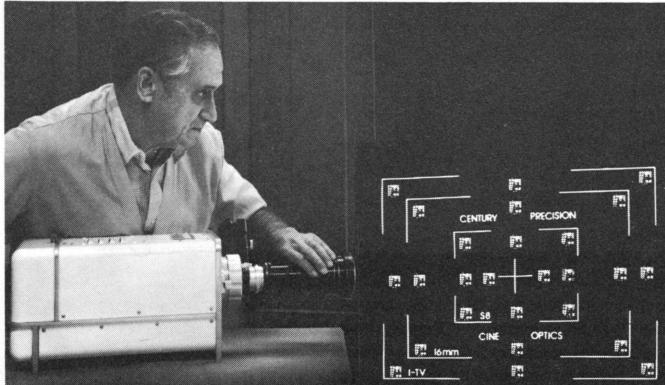
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After July 1, 1980

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NEW DATE: JULY 1, 1980



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ROBERT ALTMAN'S SOUND TECHNIQUES

When recording in the traditional monaural sound format, two people wearing radio microphone equipment and speaking to one another can cause a condition called *acoustic phase cancellation*. The high end will drop off of the transmission and everything from 1,000 cycles on down tends to become dull sounding. The two mikes in the same pattern become like two speakers out of phase in a hi-fidelity system when the two speaker cones move against one another instead of in harmony. To avoid this condition of frequency cancellation, a recordist has to dump a pot while one actor speaks and then reverse the procedure while the other actor speaks. This is common practice, but the problem often becomes untenable with exterior sound, because level shifts and sudden dropouts still remain in the background of the track. This can make rerecording a nightmare and looping sometimes the only solution.

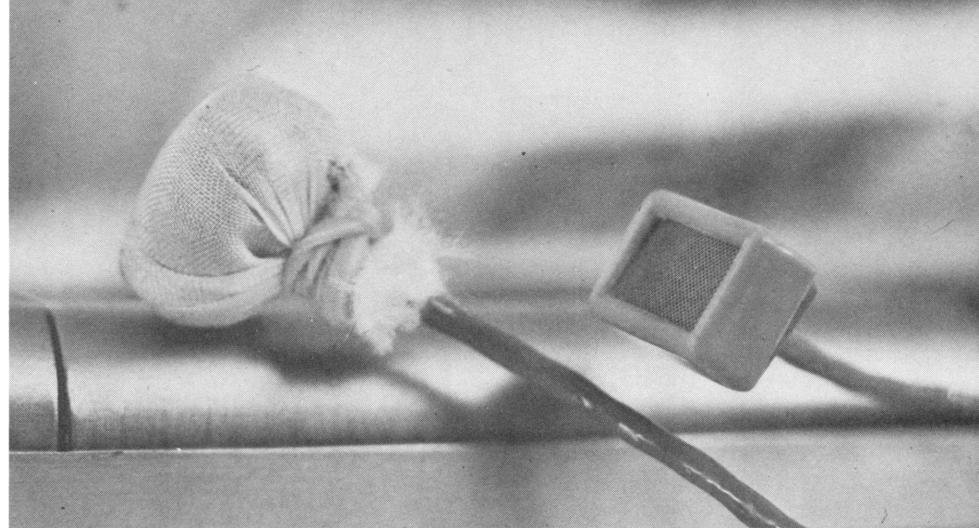
In 8-track, one dialogue track can be shut down and another left to play, while a synchronous background track continues to record ambient sounds which can later be used to bridge any cuts.

There were days on **HEALTH** when as many as 14 radio mikes were in use at one time, all collecting relevant dialogue, both off and on-camera, and sync effects which could be later used together in one scene if the director wished. No one has to go around afterward with a Nagra and collect sounds or spend time at an effects library buying additional material.

Gravener emphasized again that the intensive use of dialogue was for flexibility and a greater variety of selections in post-production. "The average person," he said, "can only comprehend and retain 1½ conversations at a time." Altman, however, claims that he can handle three at once. This is a gift that I'm sure would make any gossip columnist or switch-board operator envious.

Recording two-party phone conversations with 8-track was also accomplished with ease and there was no need to filter voices after the fact.

There are interference problems with radio mikes, and although Bob's crew did not have any, they can still exist. Bob uses a lobed shaped high-gain directional antenna on a pole placed close to the radio mikes. This antenna takes the signal from the omni-directional wireless transmitters and beams it directly back to Bob's receiver, thus eliminating a lot of spurious bouncing around. Bob's clever innovation of the antenna works in any wireless situation



The Mini-Mike, made by Ivan Kruglak of Coherent Communications, shown with and without a silk wind gag. The Mini-Mike was designed so that its frequency response would match that of a Sennheiser as closely as possible when concealed under clothing. (BELOW) A stack of Micron wireless transmitters on Gravenor's sound cart after a day's work.



and, by taking away a signal's opportunity to carom off of solid objects like reflectors or flag stands on the way home to the mixing panel, it greatly reduces radio frequency (RF) interference.

Master scenes involving several actors with mikes rarely suffer from interference and retakes are unusual because an alternate track can always be favored. Closeups when only one actor is speaking lines are the only times interference might force a retake situation.

Because the FCC has now assigned manufacturers of wireless transmitters the same frequencies used by TV stations using Channel 8 and 10, certain areas of the country (like San Diego, for

instance) with a Channel 8 preclude the use of half the available signal space for wireless units. St. Petersburg has both Channels 8 and 10, but the Altman set was located on the fringe of their beam and caused no problems. This good fortune is attributed to Gravenor's use of the high-gain antenna.

Gravener, in an effort to be circumspect, pointed out that you won't get the same quality from a radio mike that you will from a good conventional microphone like a Schoeps or a Sennheiser, but that is not their mission when working with Robert Altman. "He demands a full rich multi-layered track which will color, **Continued on Page 384**

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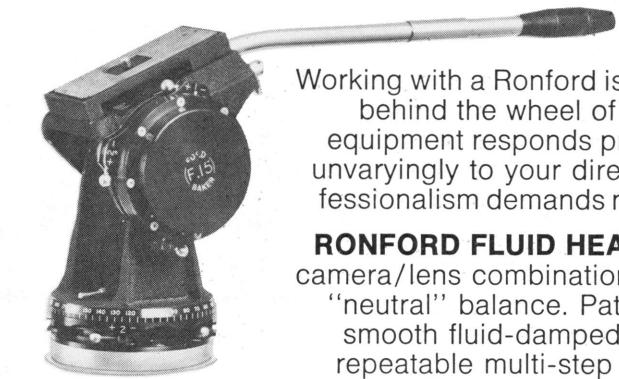
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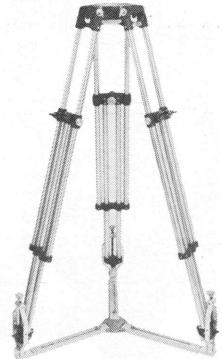
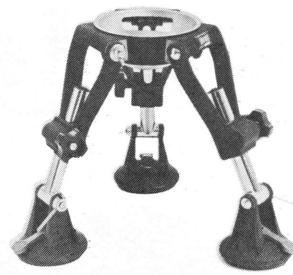
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SHOOTING "THE SCHEDULE MASTERS" WITH WESSCAM Continued from Page 391

which the system is transferred from an overhead track to a crane with camera running... an uncut eight-minute shot.

One reason for Wesscam's unusual stability is that there's no conflict between camera and gyros. The camera moves around the gyros, not against them. For aerial work the entire assembly is housed in a lightweight dome with a 1/16-inch plexiglass window. The dome is driven by an independent sensing and motor arrangement that keeps the window in front of the lens as the camera changes positions.

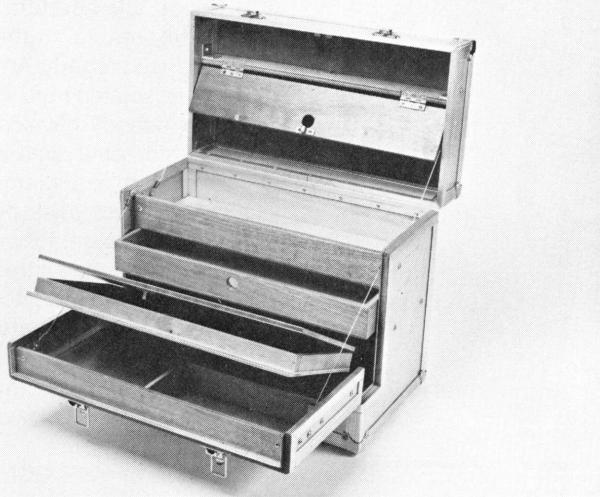
The platform can be configured with a number of different cameras, including the modified Mitchell MK II, Panavision-equipped MK II, and VistaVision. Ron makes detail changes and adjustments personally in his Oslo shop. For the 16mm system he uses a Photosonics 1P camera (variable speed 2-400 frames) equipped with a pellicle beam splitter and Sony 1450 video pickup. 1200-foot core-load coaxial magazines are used with this setup. We found them to be clean running and a definite advantage when time and helicopter fuel were in short supply, or when our locations prohibited easy take-off and landing.

We were fortunate to have a very sharp Angenieux 12-240mm lens, allowing us to move in tight even when local air regulations or other considerations kept the helicopter well away from the subject. For part of the film's extensive opening "mood" sequence, for example, we did some shots in England involving a man herding sheep. Ron was able to work the shepherd quite close-up, yet the helicopter could hold far enough away to keep the sheep from spooking. The long lens was also helpful in framing beyond rotor downwash over dusty fields and in avoiding the helicopter's shadow. The Wesscam platform provides rock-steady results throughout the zoom range with negligible focus softness from the plexiglass dome window.

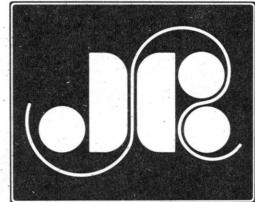
All camera and lens functions are controlled from a remote console. Ron places the console on his lap and operates in the co-pilot's seat. An immediate benefit of this arrangement is that both doors are on the aircraft... there's no wind or cold to battle and voice communication between pilot, cameraman and crew is greatly facilitated. An Ikegami 5-inch television monitor is used as a viewfinder. Console controls are provided for aperture, camera speed, zoom action, zoom speed and focus. There's also an electronic footage counter. Camera movement is controlled by a "stiff" stick that remains in a fixed

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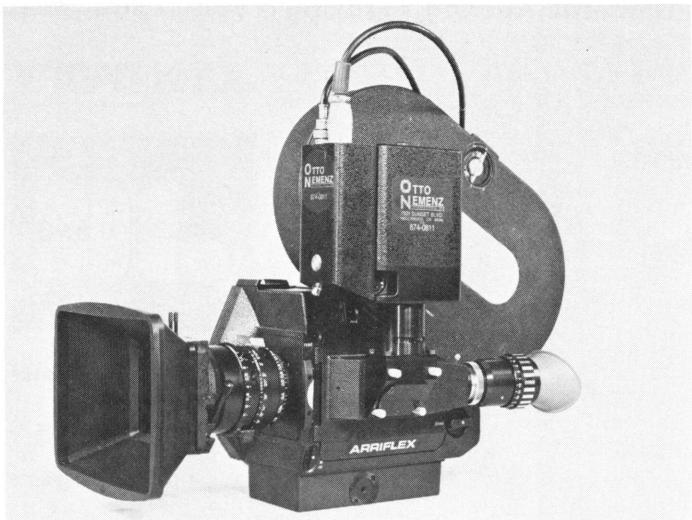


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upright position while sensing hand pressure commands, making extremely subtle moves possible. As important, there's no tendency to overcorrect to offset sudden helicopter movement.

An interesting feature of the console is the capability to adjust speed and aperture continuously while the camera is running . . . something that's all but impossible, of course, with conventional door-mounted camera rigs. Translated into screen terms, you can start a high approach shot at very slow speed, cover a lot of territory, then dial to 24 frames as you descend and near your subject. Speed and aperture shift are absolutely undetectable if the shot is choreographed properly. And because the camera is isolated from wind inside the dome with nobody physically touching it, you can stop on a dime with an experienced film pilot like Marc. We did so many times. We'd pass over an establishing farm or village, for example, descend as we approached a tree line, cross the tree line, identify a tractor working in a field, come alongside, stop dead and watch the machine and implement for several more seconds, perhaps finishing with a slow zoom to a closer shot of a particular feature.

One of THE SCHEDULE MASTERS most difficult and dramatic shots used this sequence of events in reverse. For the film's finale we planned a reveal of Deere's "Long Green Line"—all European-built tractors and several U.S. models—massed on a hillside. We started the shot with an extreme close-up of the John Deere logo on the front of a tractor working with a seed planter at the back of a plowed field. Marc held the helicopter on the ground under full power. As the tractor approached, Ron zoomed out slowly to hold the logo, then Marc began to lift gradually and sideslip away from the machine until it was fully revealed. As the shot developed, the camera continued to hold the working tractor but now circled the end of the line, moved along the fronts of the static tractors to center, then climbed slowly and retreated over a long valley. The final composition gave us the working tractor, the Long Green Line, and a picture postcard view of lovely rolling farmland with a little village spotted in the distance. The effect was marvelous, much like having a gear-driven special effects dolly in the sky.

We were able to check the results of this and our other aerial shots on location thanks to Wescam's video pickup. The operator's console feeds a 1/2-inch Sony black-and-white reel-to-reel recorder and we could watch playback through the console monitor. Additionally, we arranged for one-day lab service and

screened dailies each following night at the hotel. The European tractors were all hand-built prototypes and in great demand in the Deere organization. They were available for a certain number of days and that was it, so we had to be absolutely sure we had what we wanted.

Fortunately, very few pickups were necessary. We choreographed most every shot in advance with attention to a variety of approaches and moves, and match intercutting with our ground photography. Because the Wescam platform can be changed from one side of the helicopter to the other in about ten minutes time, we were able to switch screen direction with little difficulty. The camera can pan 360 degrees continuously, and tilt as much as 90 degrees below or 30 degrees above horizontal. In effect, it is totally unrestricted on its side of the aircraft. The pilot must still fly the lens, of course. The operator has no physical relationship to the camera . . . he's sitting facing forward, yet the camera may be facing to the rear with the helicopter moving at an angle to the subject. It's somewhat like trying to pat your head and rub your stomach at the same time, and it takes a practiced team to carry it off. Ron and Marc have worked together long enough that very little communication is necessary . . . they usually got our choreographed shot in two or three passes, then would try a couple of variations that often yielded nice results. Some of our most pleasing footage over European countryside was developed with cameraman and pilot creating shots ad lib.

Traveling through Holland, Germany, England and Spain, we worked six weeks straight. It was a considerable logistical undertaking. As well as the normal difficulties involved in moving crew and equipment, support vehicles and a helicopter to a number of remote locations, there was the additional job of getting the right tractor with the right implement into the right field doing a perfect job under actual farming conditions. And "faking" was out of the question . . . you can't make crops grow overnight, nor can you pretend a field is ready for plowing when it's not. We had excellent production managers in each country and a task force of some 20 John Deere people to help us keep things running smoothly. Cameraman Ron Johnson, assistant Pat Gibbons and Deere Producer Jeff McCullough headed our ground production unit with foreign nationals filling in the other technical positions.

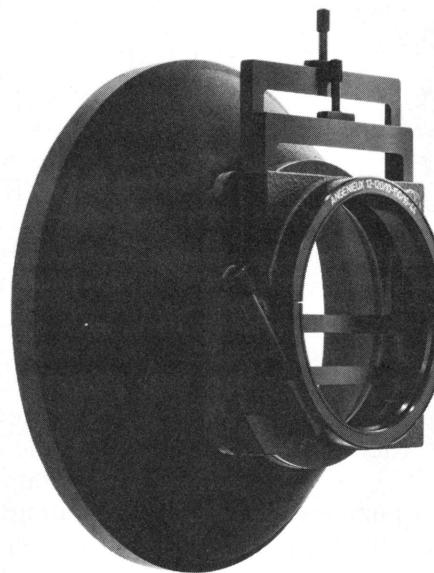
We chose to do most of our shooting in early or late light to develop long shadows and rich textures in fields and countryside. The limited number of

Continued on Page 402



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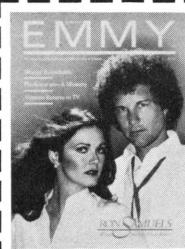
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FEATURES

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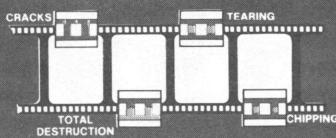
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THE SAGA OF A SHOESTRING EPIC Continued from Page 333

volunteer cast and crew, a Bolex with a homemade blimp, borrowed lenses and microphones and a few rented lights.

Filming began in June during an unscheduled downpour aboard the riverboat *Mary Woods* and ended four weeks and several 20-hour days later. Dr. Young spent almost another 2,000 man-hours (unpaid, of course) single-handedly syncing up over 17,000 feet of dailies, mixing and looping audio, editing the workprint and even conforming the original 7247 color negative for the 45-minute finished film.

The large cast and small crew survived an assortment of interesting travails during the filming of *PRINTER TO THE TERRITORY*. For example, most of the period interiors were authentic to the point of having no electricity or air conditioning. Some cabins were so small that the crew had to shoot interior scenes by stationing themselves and the camera outside a convenient window.

An actor whose role required several pivotal equestrian action scenes sheepishly admitted at the last moment that he had never been astride a horse before. After twenty-five or so bruising takes, the actor learned how to ride without nearly falling off.

One hirsute actor in a major role announced in the middle of the filming schedule that he was shaving his beard the next day in a last-ditch effort to alleviate his unemployed status. Dr. Young had no choice but to extend that day's shooting until 2 a.m. in a successful attempt to film all the young man's close-ups and dialogue scenes before the razor intervened.

A husband and wife who had been cast in key starring roles broke up and went their separate ways during the course of the filming schedule. Their parting, much to Dr. Young's relief, did not affect their professional on-screen relationship.

Considering the demanding schedule, volunteer cast and crew and make-shift equipment, the filming proceeded quite smoothly. There were no "deserters" on either side of the key lights. The only significant technical worry was the necessity to "loop" much of the sound recorded in 18th- and 19th-century buildings surrounded by noisy freeways.

One area in which Dr. Young's anemic budget did not skimp was with costumes. Among the authentic period costumes director of makeup William Males and costume designer Alice Taylor selected in New York were many items created originally for ABC's *ROOTS* and PBS's

THE ADAMS CHRONICLES. Since any damage to the expensive costumes would have meant their purchase instead of rental, everyone was cautioned to avoid lunch-break accidents and perspiration stains. The mid-summer shooting schedule made this last concern a sticky challenge.

Assisting Dr. Young on *PRINTER TO THE TERRITORY* were director Dr. David Ritchie—a professor of theater at the University of Arkansas at Little Rock, and financial manager William B. Worthen, Jr.—director of the Arkansas Territorial Restoration. The film's technical crew consisted of Gay Mobley, first assistant cameraperson; Dale Carpenter, production assistant; Freeman Mobley, key grip; Lynn Rockenbach, gaffer/sound recording engineer, and David Hunter, still photographer.

PRINTER TO THE TERRITORY: THE WILLIAM WOODRUFF STORY premiered early in 1980 and is currently being shown as an introduction to groups visiting the Arkansas Territorial Restoration in Little Rock. ■

(ABOUT THE AUTHOR: GARY JONES is a Little Rock videotape production executive who told Dr. Young from the start that he was crazy to begin such a film on a budget more appropriate for a couple of thirty-second TV commercials.)

CINEMA WORKSHOP

Continued from Page 324

as the light lines remain stationery. The goal is to get the dark lines to overlap perfectly over the light lines, causing both to "disappear." Once this is achieved, the red vertical screw is rocked back and forth to accomplish the same end with the vertical lines.

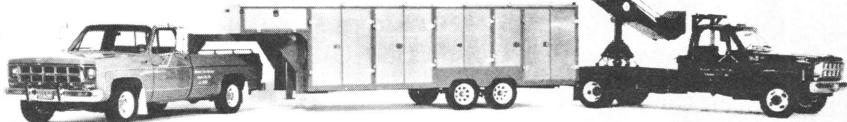
Likewise, the red switch is turned off and blue is turned on. With blue and minus green now being displayed, the blue horizontal and blue vertical screws are adjusted in the identical fusion.

This completes the centering portion of the registration. If the resulting patterns of the above two steps (red and blue) yield an almost invisible grid over a major portion of the frame, the camera is probably near optimum calibration and no further registration is necessary. However, the patterns may have resulted in only a small portion of the grid being invisible near the center of the screen, while most of the double line grid is visible over remaining majority of the area. Under these circumstances, additional registration adjustments are required. This will be our next topic. ■

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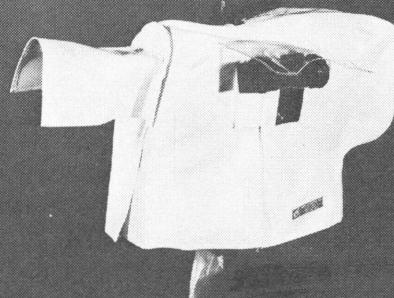
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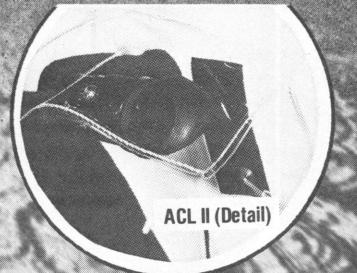
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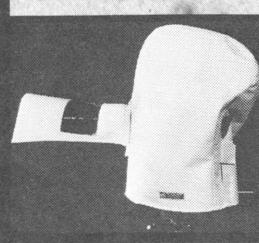
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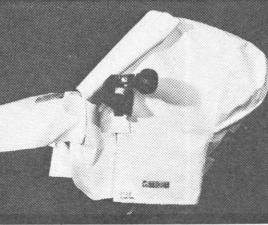


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SHOOTING "THE SCHEDULE MASTERS" WITH WESSCAM

By WILLIAM J. SCHWARTZ

When Film Production Manager Bob Parker asked me to write, produce and direct a major product introduction for John Deere in Europe recently, I had no idea I'd soon be working with the Wesscam gyro-stabilized camera system.

Frankly, it was the farthest thing from my mind as we sat down for our first script conference at the company's advertising office in Mannheim, Germany. Deere had long been the world's leading manufacturer of farm equipment, primarily on the strength of its North American sales. Now it was gearing for substantial market gains overseas with an impres-

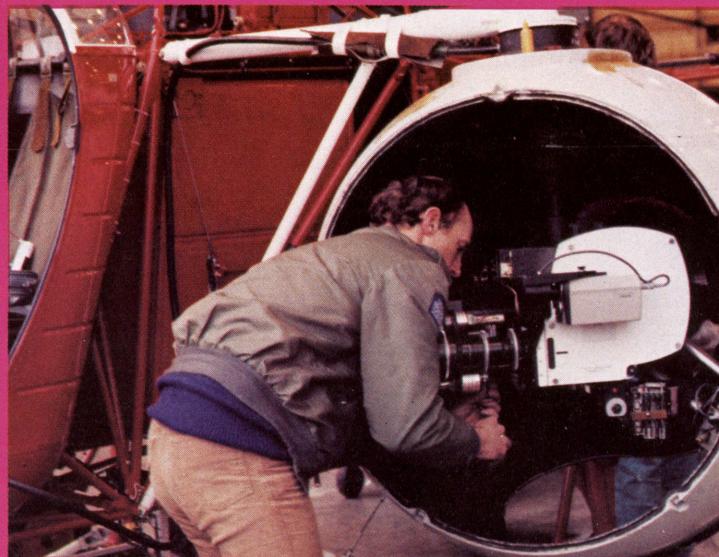
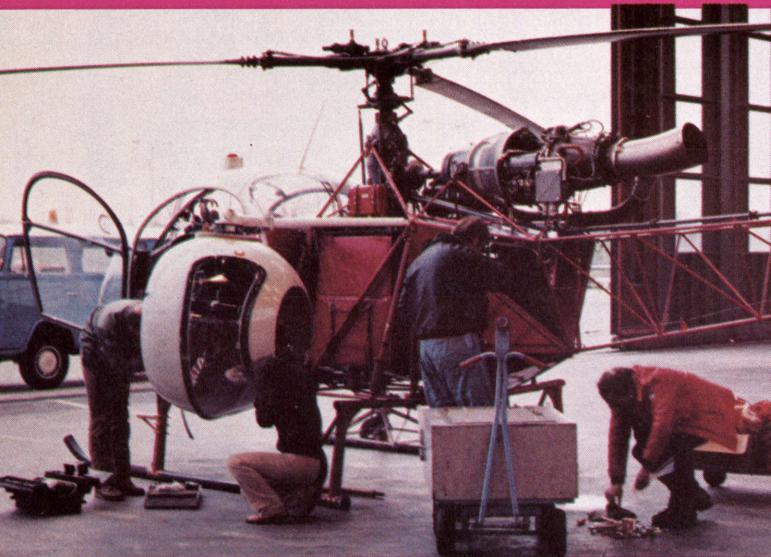
sive new line of European-built tractors . . . called the Schedule Masters for their superior productivity.

We settled on three major objectives for the film. First, it was to be fresh, completely different from any product introduction Deere had done in the past. We wanted our audience of prospective customers to sense something special from fade-in to fade-out . . . not only new equipment, but new ways of looking at that equipment. Second, the film had to carry a complete product story. European dealers seldom keep much inventory on hand, so we had to do a thorough job on

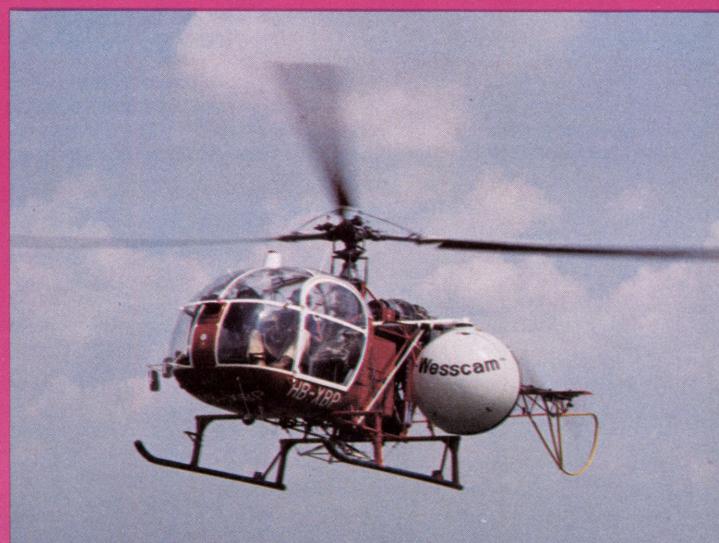
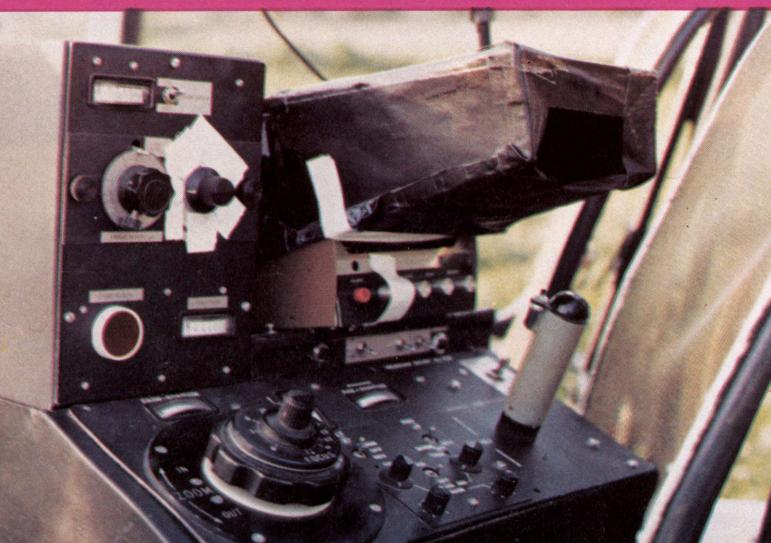
every one of nine new models, every one of several features. And we wanted the quality of our presentation to underscore the quality built into the line. Finally, the film was to be thoroughly European, showing a wide variety of European settings and actual field work rather than staged shots on the company's test farms.

It was a tall order. Deere has produced a number of excellent product films over the years, so it's not easy to come up with brand new ways to present its equipment. Additionally, I knew we had to incorporate *Continued overleaf*

(LEFT) In hangar at Amsterdam's Schiphol airport, Wesscam dome and camera are fitted to an Alouette II helicopter. The dome has doors on both sides for access to the camera and window. (RIGHT) Wesscam cameraman Ron Goodman adjusts gear-driven 12mm-240mm lens in pre-flight check. Sony 1450 video pickup is seen alongside camera magazine. Camera can pan 360 degrees continuously and tilt from 90 degrees below to 30 degrees above horizontal.

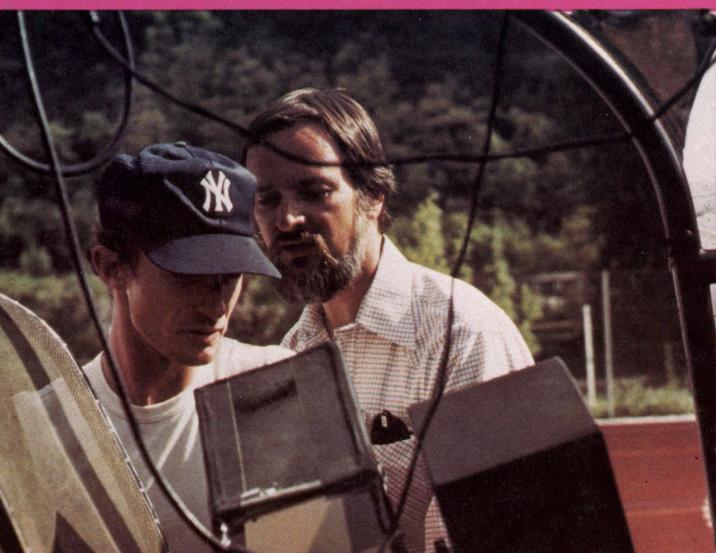


(LEFT) Operator's console has controls for camera speed, aperture, zoom functions and focus. The "stiff" stick control is seen at right, below a prefabricated cowling used to keep light off viewfinder monitor. Goodman has used the Wesscam equipment on the *STAR WARS* sequel (*THE EMPIRE STRIKES BACK*), *ESCAPE TO ATHENA*, *THE CASSANDRA CROSSING*, *SUPERMAN*, *FLASH GORDON* and a number of other features.



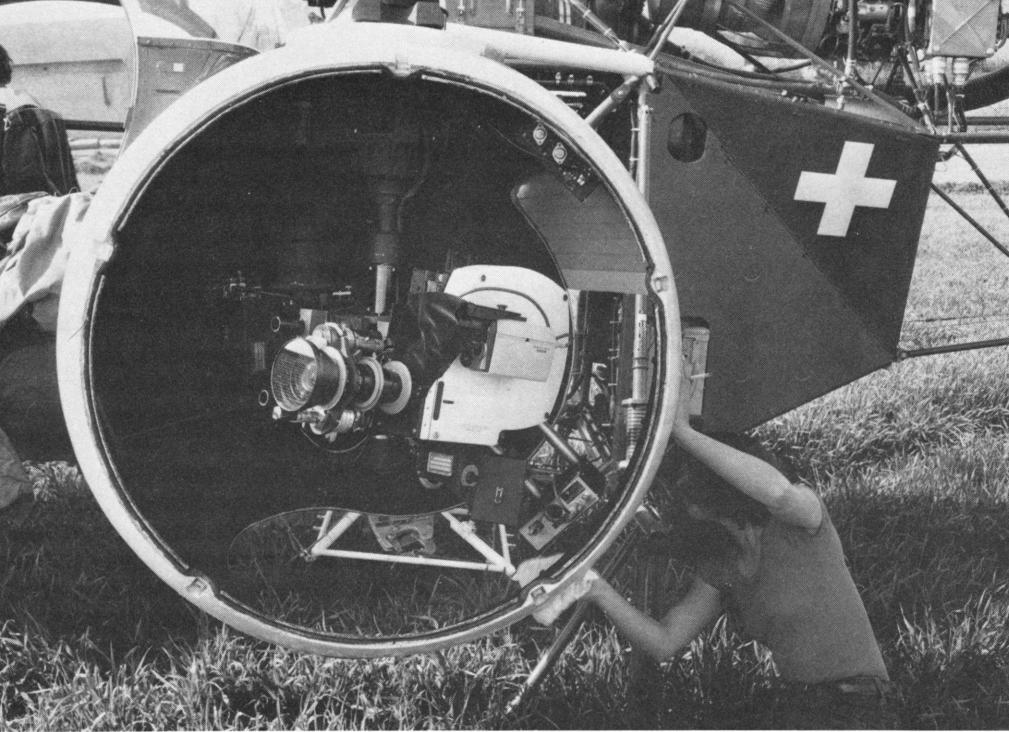


(LEFT) Helicopter-mounted, Wesscam offers the ability to stop on a dime and hold "tripod steady" shots indefinitely. (RIGHT) Aerial crew approaches a farmer hitching wagon to new Deere tractor. Platform stability and 12mm-240mm lens made closeups of details possible at the end of wide establishing shots. (BELOW LEFT) Goodman and Writer/Producer/Director Bill Schwartz (right) check a video tape playback on a control console's monitor. (RIGHT) Goodman and Herron check the loop on one of the Photosonics' 1200-foot magazines. Eastman 7247 color negative was selected as the filming stock.



(LEFT) As the shot begins, helicopter rounds the end of a row of 15 static tractors and moves to center, then climbs gradually and starts long retreat, as working tractor moves up the field. (RIGHT) Starting two feet over a field of spring wheat, pilot Marc Wolff and Goodman check final signals, line up a tailaway shot, and execute it. With both doors on the aircraft, the atmosphere inside is quite calm and collected.

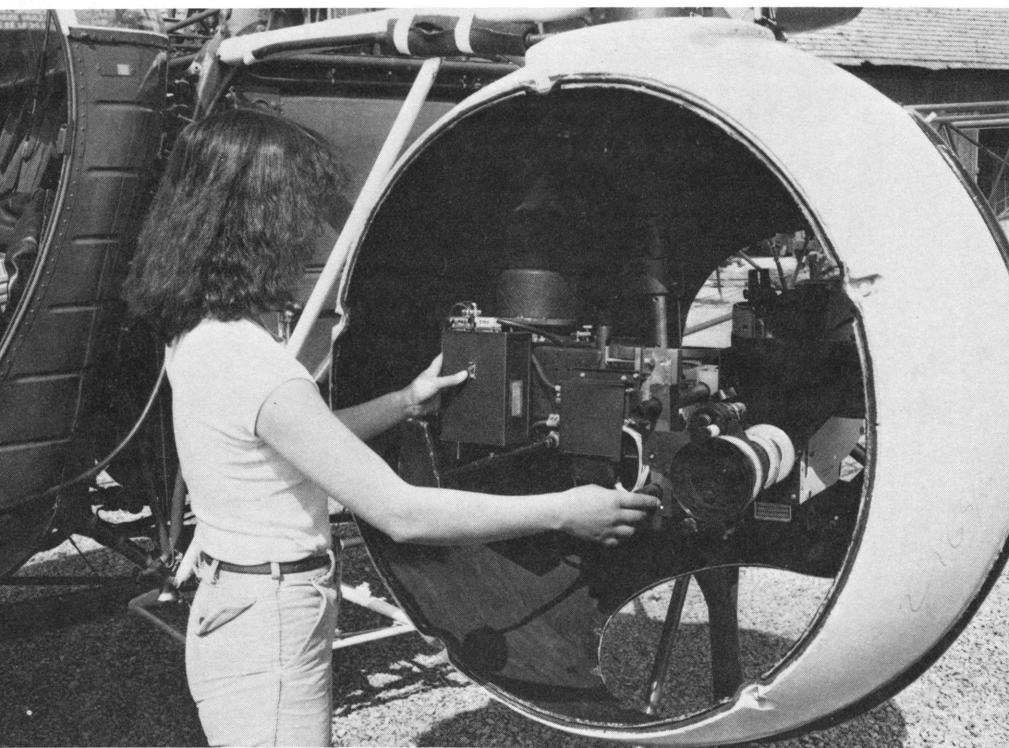




The 16mm Photosonics IP camera is equipped with an Angenieux 12mm-240mm lens, a pellicle beam-splitter and Sony 1450 video pickup. Platforms are also available to accommodate standard 35mm Panavision and VistaVision equipment.



Ground unit cameraman Ron Johnson and assistant Pat Gibbons prepare a speed rail camera mount for a driver's POV shot.



(ABOVE LEFT) Camera and gyro assemblies are mounted on a single shaft. The dome has large doors on both sides for access to equipment and window. (BELOW) A basic requirement of the product was to find a new way of looking at the John Deere equipment featured. The answer was the Wesscam gyro-stabilized camera which promised tremendous maneuverability when helicopter-mounted, plus flawless stability in some very complicated situations.

at least some of our European stage-setting with feature-benefit material. Yet I wanted to avoid any sort of "here we are in Spain and now let's talk about engine power" motif. We had to feel the personality of each country without naming names, sense farmers' deep respect for their land, and deal with the specific problems they face in increasing the productivity of that land . . . all at the same time. As I thought about different story approaches I kept wanting to be able to get up off the ground so we could establish locale and scope, but still come right down into a field and sit alongside a tractor when that was necessary. Moreso than normally, technique and story would have to fit hand-in-glove.

The light finally came on. I had seen Ron Goodman's photography with the





Ron Goodman and Bill Schwartz go over plans for THE SCHEDULE MASTERS finale, a revealing shot of the John Deere "Long Green Line".

Wesscam gyro-stabilized camera platform in a number of features . . . and perhaps more pertinent to my work in corporate and advertising films, in some lovely non-theatricals and commercials. It was the only system I'd seen that promised the capability I was looking for . . . flawless stability in some very complicated situations, shot after shot after shot.

For all practical purposes, Ron's name and Wesscam are synonymous. Although the equipment has been available for rental to a limited degree, it has seen its most widespread and accomplished use in his hands. I phoned him at his home in Norway to get an idea of feasibility and costs, then screened some of his work for the Deere people and presented a treatment structured around Wesscam aerials. The idea was approved and I began work on a first draft script. A few weeks later, I flew to Norway to discuss the project with Ron. He and his crew were just completing some location work on the STAR WARS sequel in northern Norway, so I had a chance to meet assistant cameraperson Margaret Herron and pilot Marc Wolff too. To my surprise, Ron and Marc pointed out areas in the script where they felt I was being a bit conservative about Wesscam's abilities, and we made a final identification of sequences that would be done from the air and from the ground. We also settled on the 16mm format, due to the considerable footage we expected



In village of Obergraumbach, Germany, ground unit picks up a sequence begun by the airborne Wesscam. Mix of air and ground shots was about 50/50. (BELOW) Ground unit cameraman Ron Johnson and assistant Pat Collins film a "styling" shot for a Burkey 18-foot crane.



to shoot and the fact that we would be doing our lab work overseas at comparatively expensive rates (an average of 65 cents per 16mm foot for developing and a one-light color daily).

With another eight weeks of script and pre-production work on both sides of the Atlantic, we were ready to get shooting underway. We began in Holland, and I had my first opportunity to examine the Wesscam equipment in detail as it was fitted to our Alouette helicopter at the Amsterdam airport.

Technically described, Wesscam is a remotely steered and gyroscopically stabilized camera system (not mount). The design was originally patented by

Canadian Westinghouse in the early 1970's, and is based on a balanced gimbaled platform stabilized using gyro technology similar to that found in an aircraft auto pilot. There are three gyros, one each for roll, pitch and yaw axes. They work in two ways . . . directly to steady the platform, and indirectly to signal dampers that augment the stabilizing effect. The platform is suspended from a single point. As such, it can easily be mounted on any kind of moving base . . . helicopter, boat, crane, camera car, train etc. Among Ron's most remarkable feature credits, in fact, is the elaborate closing of Antonioni's THE PASSENGER in *Continued on Page 370*

MAGIC MOMENTS FOR "WORLD OF WIZARDS"

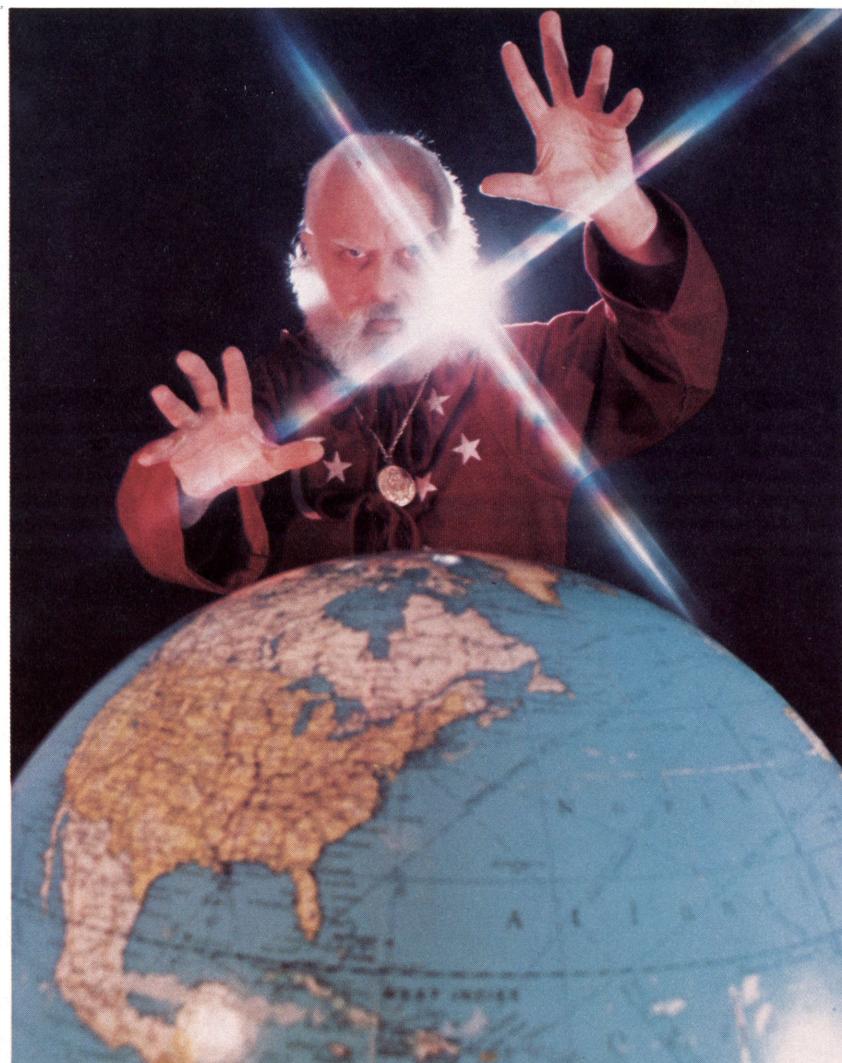
By ROBERT NEW

Boy! If a magician has to do this for a living, it's one career I will think twice about . . . although I should talk. There I was, roped to the Chief of Police, standing—yes, standing, with my camera—on what I hoped was solid ice at the bottom of Niagara Falls. It was a crystal clear day at a bone-chilling -14°C in mid-winter, and as I was shooting straight up at one of the most awesome sights I have ever experienced, with camera or without, I saw through my eyepiece a solid wall of falling water, at the very brink of which, hundreds of feet above me, was a masked man, hanging upside down, struggling to escape the confines of a straight-jacket. He looked like some medieval torture victim with his feet strapped into a foot harness that left him perilously dangling from a cable; in turn descending from a large crane overhanging the falls, which were also performing today, flinging four foot chunks of ice down into the chasm.

To the amazement of six off-season Chinese tourists who, for some reason, had shown up at seven in the morning at what normally, in the summer, would be one of busiest of tourist sites, it must have seemed like some strange North American form of execution. After all, we had put a mask over the man's head, hung him upside down, and given the last rites before swinging our mad magician out over the falls. But to the director/producers from Insight Productions, Pen Densham and John Watson, and to my—

(ABOVE RIGHT) James "The Amazing" Randi, a Merlin-esque, larger-than-life magician of international fame, was the perfect host for WORLD OF WIZARDS. With his striking white hair and beard, it required no extra makeup to convert him into a colorful character. (BELOW LEFT) Producer Pen Densham, Randi and Cinematographer Robert New visit the grave of the legendary Harry Houdini, whose surname actually was Weiss.

The author's account of a year spent filming a one-hour "docutainment" special on magic in America, a blend of documentary and entertainment



self, a cameraman, it was the exhilarating culmination of over a year's worth of filming in an attempt to capture everything unique and masterful in the world of magic, from the masters of the art like Dai Vernon, to Doug Henning; from the unknown up-and-comers to the tombs of its last heroes, in order to create what we hoped would be the definitive television special on magic. The man who was busily escaping from a straight jacket over Niagara Falls, in just under three minutes, was providing us with the perfect climactic ending to our sixty-minute program; at the same time, paying tribute to the magician and escape artist who, for many years, had been his hero; the original creator, in fact, of this dangerous stunt . . . the great Houdini.

It had taken the producers several months of concentrated effort, and three

negative runs at the Niagara Falls City Council, to convince them they were on the level; that they would not be treating the stunt lightly, and wouldn't litter up the base of their falls with an unwanted corpse in a straight jacket. Indeed, the whole operation proceeded like some secretive military drill, with the crew and police being signed to contracts of secrecy. This was mainly because we were dealing with a potentially dangerous situation, with someone's life weighing in the balance, but also because of the fear that we would put on our show at the Falls, only to discover that we had been scooped by Channel 7 Eyewitness News. Needless to say, our luck held and this didn't happen. In fact, everything proceeded like clockwork—we were on the way to an all-time exclusive.

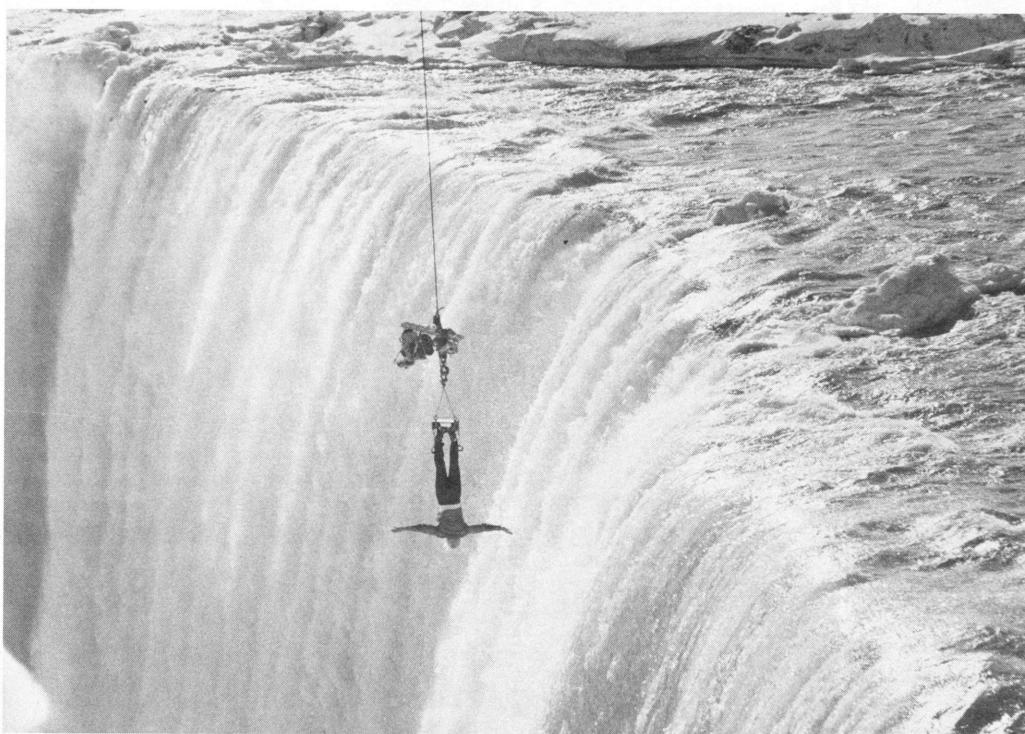
To myself and the three other cameramen, present for extra coverage of the Niagara Falls shoot, this stunt provided a uniquely exciting challenge, demanding to be shot from angles equally as perilous as the performer's. The crew consisted of myself, shooting from below the falls; Bob Brooks, shooting a general over-view shot from a cherry-picker on the edge of the gorge; Mark Irwin, who had done an ingenious job of mounting a remote-controlled camera with a wide-angle lens pointing straight down, just four feet above our escapist's foot harness; and our director, Pen Densham, who was shooting the preparation and set-up hand-held to get a more subjective

Continued on Page 398

Cameramen Mark Irwin and Bob Brooks examine the remote camera rig to be used for the Niagara Falls shoot. The rig would be mounted directly above the bound and masked magician.

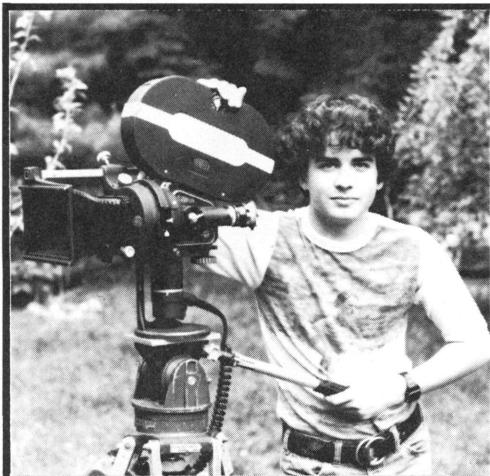


The Amazing Randi, trussed up like a turkey in a straight-jacket, hangs upside-down from a crane which is about to swing him out over Niagara Falls for filming of his incredible escape feat. (BELOW) Randi hanging over the Falls. The remote film camera can be seen mounted directly above him for a spectacular shot.



Photograph of the Houdini seance which took place on Oct. 30, 1976 at the Niagara Falls Houdini Museum. Houdini scoffed at such rituals, labeling all of them as fakes. All efforts to coax him to communicate from the beyond in such a fashion have failed—including this one.





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**ROBERT ALTMAN'S
SOUND TECHNIQUES**
Continued from Page 368

highlight and augment his story," Gravenor said, "one which will give nuance to each character or make any comment, sound or musical effect Altman desires, and furthermore, he wants it available all the time."

Toward the end of a particularly hot day Bob Gravenor was sitting at poolside under a large umbrella that was rigged to shade his sound cart. He was monitoring a rehearsal. Lifting his earphones he said, "Y'know, when I'm in the middle of an 8-track show like this, I always wish I was doing a perspective sound job instead. You get so lazy on 8-track. If everything runs correctly you're just checking levels and looking for distortions. I'm lucky that I can bounce between the two styles. Of course," he added as he slipped his phones back on, "I could tell you stories. Not every set runs as smoothly as this one."

Luca Kourmelis is Altman's script-person. She monitors dialogue on a headset which can feed her any recording channel she indicates. I thought it was important to find out how she felt about Altman's approach to sound and to his work. I asked, "How does it feel keeping track of a dozen or more speaking parts at once while trying to match props, actions, improvised lines and screen direction from scene to scene?"

"It can't be done," she said, "and if I tried to make it perfect they'd probably have to haul me away after scene one, take one. I just try to get as close as humanly possible and I depend on the fact that Bob Altman is a very understanding guy, which he is."

Gravenor pushed his sound cart by on the way to the next set-up. With his umbrella up over his sound cart he looked a bit like a hot dog man. I told him I'd have one with mustard and onions. He pretended not to hear me. "He's obsessed," Gravenor said, "with making movies . . . making them his way and with a lot of sound, thank God. He's also a maverick and most of the Hollywood establishment can't handle that. He's always looking for new things, new ideas, not just in sound but everywhere. Unfortunately, that approach scares a lot of people, but we soundmen are fearless." He turned back once more before leaving and said, "It's like being part of a huge family . . . just look at all the wives and kids running around. It's like this all the time. He just wants us to try our best and we're glad to do it for him." Finally, Bob waved goodbye and pushed his cart off to the sunset location.

**COLOR NEGATIVE FOR
TRANSFER TO TAPE**
Continued from Page 364

information stating that our Rank flying spot scanner could handle negative, nobody of note had used it for negative transfer. I say "of note" because the commercial producers had been using it to some extent, but certainly nobody involved in making a prime-time special. However, Gary Morton seemed to be interested in doing it that way, so we wound up being involved with the show.

As far as special handling was concerned, the main thing that had us jumping out of sequence was the proper handling of the negative and the cleaning necessary to get it over for the transfer process. The synchronization of the sound tracks posed some problems because, since the tracks had not gone through a negative cutter for any kind of conforming, a lot of time had to be spent in locating sync marks and proper takes and just matching up the sound with the picture. That problem eased a little bit when we finally established more efficient communication with the shooting company, by means of their camera reports. That didn't eliminate the problem, but certainly made it much more accomplishable than it was at first.

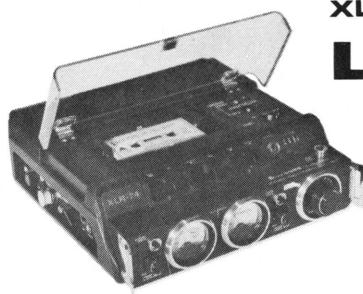
Despite some alterations that had to be made in the original transfer process, the show finished up editing just as any tape show would. It was delivered, the network aired it and we billed it.

**JOHN KOCH,
Supervisor, CFI Telecine Department**

I'm the one who actually did the transfer. It was a little unusual in comparison to our normal transfers in that there was so much film and it was not documented as to what we had and what was going to come the next day and what mag tracks went with what pictures. So there was some bookkeeping that we had to be concerned with. We had a few mix-ups there. I finally decided to go by the sound track log and then find the pictures (from the three cameras) that would go with each sound track. We laid down the three basic camera angles on three different video tapes. That required doing some tape changing, which we tried to avoid because it takes time.

Another problem was trying to keep the color constant throughout, because they would be jumping around instead of taping one sequence complete with all of its camera angles before going on to another sequence. We had to try to get back where we were colorwise, which was difficult to do on a day-to-day

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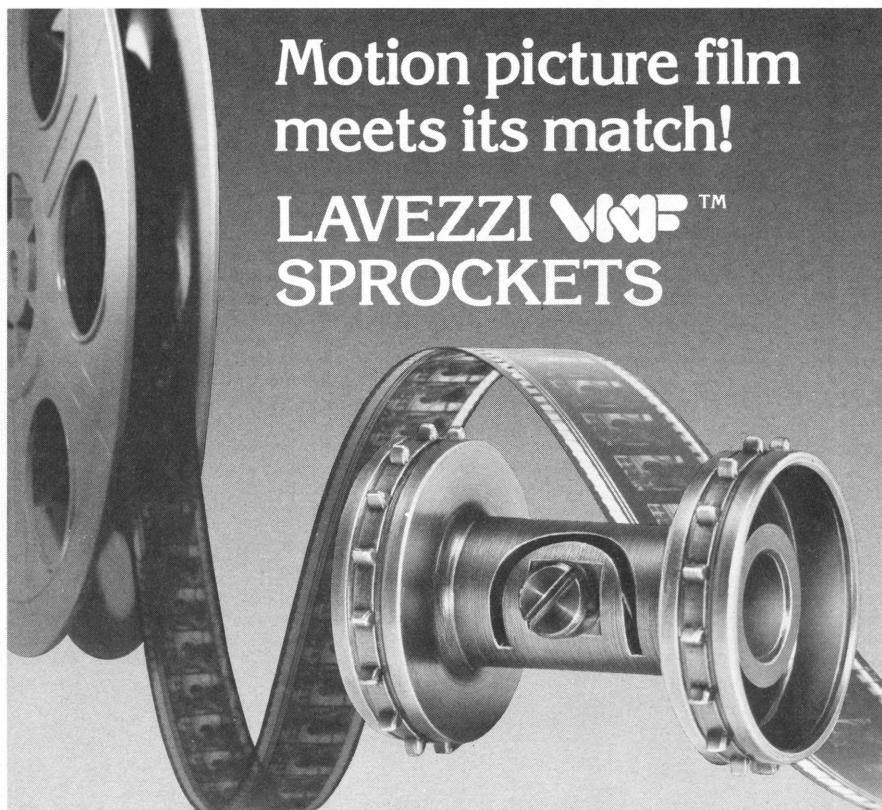
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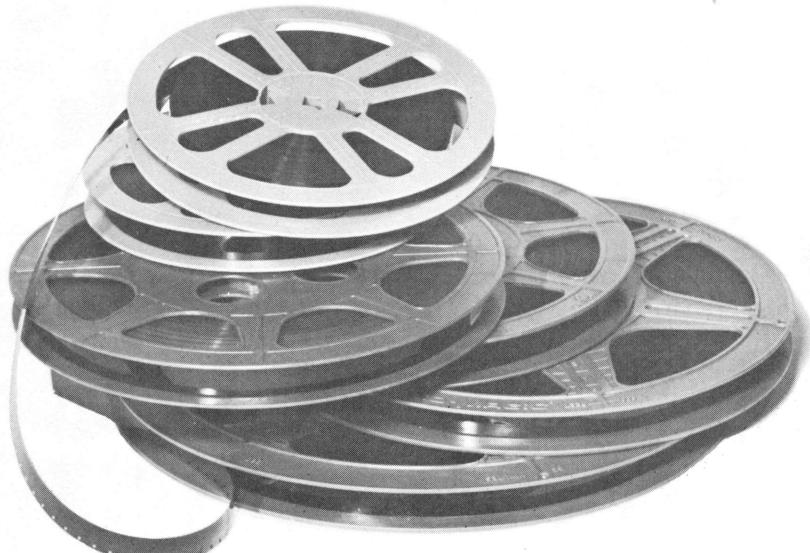
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basis. I'm sure they had to do quite a lot of color correcting in editing, because the color would bounce around.

Also, in the handling of that much negative, there were inevitable dirt problems. That was a major concern to me and it took up a lot of time, having to go through a cleaning procedure each time we put up a new hunk of film. Even rewinding the negative with care took time.

GARY THOMPSON, CFI Director of engineering

I was brought onto the project after the initial sales contact and I tried to counsel the client as to how to prepare this stuff, so that when we actually did the transfer it would go as smoothly as possible. We tried to present them with the pros and cons of the thing from the very beginning.

There was nothing technically preventing us from doing this type of thing. I was more concerned with the procedural aspects of it, rather than making sure that the equipment was capable of doing it. If you consider the amount of film we were expecting to receive—almost all of its isolated picture from three cameras, with a common mag track that had not been synched up (basically wild material)—then it became an almost all of its isolated picture from those different pieces. After getting scripts and working with them to get some idea of the flow of the material, things kind of smoothed out.

I don't think that we were too uncomfortable with doing the job, considering that we had never established procedures that would provide us with a good working path through the thing. The equipment itself worked as we had predicted. We knew that we would have a certain amount of dirt problems, as you do when you are handling negative in any environment.

The technique, as it related to transferring isolated camera material to tape and editing in this manner, had already been established in using positive prints of films, so we were not concerned about the aftermath of the transfer process when it actually went into editing. I was, however, concerned about maintaining proper color balance from day to day. We transferred the material over a two-week period and it's very difficult to keep a mental picture of the electronic balance over that long of a period.

We had originally counseled the client that this would be a problem and that we would have to do color balancing at the editing point, in order to fit the scenes together properly. As it turned out, we had to do very little of that. The material was very, very consistent—more so than I had expected.

The major problem with this method that I see, after the fact, is the mag track-to-picture synching. Having to do it as we transfer is not the proper way, and that's the part that we're working on probably more than anything else right now. It really has to be synched up in the normal manner that you would use with a workprint. However, you have to handle the negative in order to do that and there might be some cutting of the negative that would not normally be done. My major concern at this point is how to accomplish that.

QUESTION: Aside from the client's stated preference for being able to edit on tape, what do you see as the "pros", if any, of this approach?

BRUEHL: The main advantage that video tape has to offer a major producer is really speed in editing. For such a producer, shooting video tape is not necessarily cheaper. Major lots are constrained by their contractual agreements with their locals in such a way that to shoot a show on tape is not necessarily any cheaper than to shoot it on film. I did some independent studies on that subject when I was head of tape at the Burbank Studios, and I've also cooperated on some studies at Paramount Pictures. The findings indicate that you can't shoot it any cheaper simply because you switch from film to tape. However, switching to tape for post-production takes advantage of what tape does best. In essence, tape does fast title and optical work, fast special effects, and it can deliver a product usually in one-third of the time that it would take to even expedite it through the normal laboratory process in 16mm or 35mm.

That is becoming an increasingly more important decision—not so much from the money end of things as from the time end. As more and more the networks delay script approval, but still maintain firm air dates on expected delivery of specials and regular shows, the creative community gets put into a squeeze that is very difficult. If he is going to pick up some time, I think the producer would prefer to pick it up in post-production, rather than give his writers five or six days less to polish a script. So if he can take advantage of that time to get it back to where it shows—and he can shoot the "film look" that he wants, but deliver faster because it happens now to be on a piece of tape—he's gained an intangible. To some producers that would be a significant increase.

As a practical matter, time has also become very important to the independent producer in relation to today's

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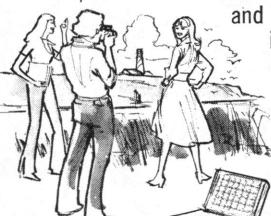
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money market. He gets money when he delivers the show, and at 17% percent prime rate interest on what cash he's got out, to deliver a show three or four weeks faster can make a significant impact on his cash flow as a businessman.

But the main advantages accrue to the producer who is happy with the film look and wants to retain that for his show. He may also have worked with certain cinematographers that he's happy with and wants to retain those working relationships. He can go ahead and do that. The only thing he has to change is how he approaches post-production, but there are some tricks to tape editing that one needs to know in order to maximize the benefits of tape.

First of all, you have to be thoroughly organized. It pays to take a lot of notes. It pays to sit down before you ever get into the editing room and be sure that you know what you want to do, because decisions in that room are very expensive. So we encourage people either to do an off-line edit, which is a much cheaper form of rough editing on tape, or at least to seek some advice from experienced tape production people—people who have been through the mill with taped shows—as to how to properly organize their material. We've found that when people seek out that kind of advice, it results in a minimum of cost to them and a maximum of efficiency to us.

We don't like to see clients floundering in editing rooms, trying to make creative decisions at \$400. an hour; that is just not the time and place to be doing that. A certain amount of that is unavoidable, but you want to minimize that, so that when there is truly a creative decision to be made, you haven't boxed yourself into a corner where you have to say, "Well, that's good enough. We're spending too much money. Let's go past it."

So get organized and save those creative decisions for the problems that absolutely need that kind of attention.

QUESTION: Would what you have just said also pertain in certain respects to a producer who is shooting on film and wants to end up on film, but who wants to go through an intermediate stage of editing on tape?

BRUEHL: Well, that's getting into a process that right now we don't have answers to. The idea of transferring film to tape, editing the tape, then going back and conforming your original negative is a step that is getting close to being practical, but is not there yet. You are confronted with the problem of editing a 30-frame-per-second tape product and then expecting to match it up with a 24-frame-per-second film product. Obvi-

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ously there has to be some technical answer to that riddle. The computer folks have worked on it and we have had some of the research people at CFI writing papers on it during the past couple of years, but it hasn't received a lot of practical application or testing, simply because the economic incentive hasn't been there yet.

However, there is another way to go if a film producer wants to utilize some of the efficiencies of tape editing but wants to end up with a product on film. It is theoretically possible to edit on 24-frame-per-second video. Now, that is something that has not been done up to this point, but it is a potential, because you could easily conform negative to a 24-frame video workprint.

Getting back to the *Lucille Ball* special, while it may not be the harbinger of great things to come in tape technology, it certainly signals some switch of the market segment toward utilizing that type of post-production efficiency—and when more people are using it, there is going to be more pressure to solve the problem of how to conform 24 frames to 30 frames. I think that right now it is solvable; it just doesn't happen to be economically necessary at the moment.

QUESTION: (To John Koch) What are your feelings about the pros and cons of the negative-to-tape approach used on the *Lucille Ball* special?

KOCH: Well, I've just been involved in the telecine end of it, which is the actual transfer from film to tape, so I don't have the overall picture on it. For example, I don't know whether it's advantageous moneywise, but qualitywise it should be the ultimate—going, as it does, directly from the original negative to video tape. It would be interesting to know if the producer came out ahead or behind moneywise, going this route.

QUESTION: What about the problem of color consistency that was mentioned along the way? It isn't like you can use a Hazeltine on a cut film workprint and take it from there. How do you control it?

KOCH: Well, basically you use your eyeball. You also have some waveform things to help you, but if somebody really wanted a color-controlled product on tape there would have to be better ways of doing it, such as what Gary suggested: having cut negatives, keeping certain scenes together when you switch from camera to camera. If you have a lot of time, you can match your playback from the film to the previous day's playback off the video tape, but

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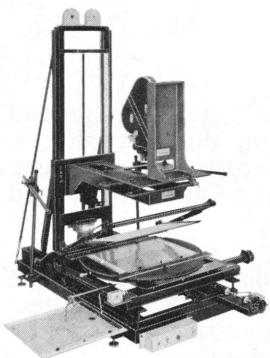
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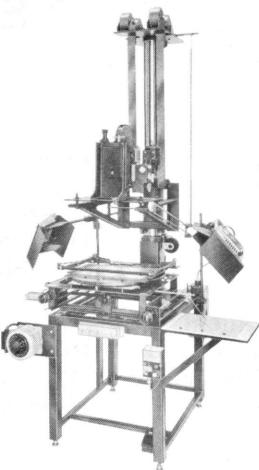
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that does take time.

QUESTION: If you did your tape edit, having transferred directly from the negative, and found that there were noticeable discrepancies in color balance from scene to scene, how much quality would be lost in making a color-corrected tape dupe from the edited tape?

KOCH: In one more generation of tape you don't lose much quality at all. You could certainly do it that way, but you'd be taking more time—and that's money.

QUESTION: (To Gary Thompson)
What are your feelings about the pros and cons of this procedure?

THOMPSON: I think that if we take this particular show, or any show of its type, where they contemplate shooting on film but distributing strictly as a video image, this is probably the ideal way for them to go—provided that the cost and time relationships work for them.

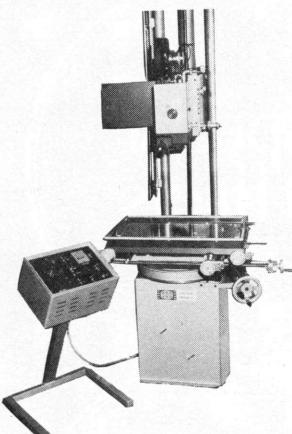
I think some of those questions are yet to be answered. But the image quality on the television screen is not just somewhat better. In my opinion it is spectacularly better than going through the normal process of getting a finalized film print and then transferring it at the network or even in our house, to video tape for the actual transmission.

Bear in mind that this procedure is standard on television, so somewhere along the line that film is going to have to be converted to a television image, which more than likely will be stored on tape. The sooner we convert the image to tape the better off we are—and obviously we now have a tool that will allow us to handle negative reliably and safely. If the company contemplates later release on film where they have to conform the negative, then that step will have to be worked out. That's one of the technical problems we have with this process.

But addressing ourselves to the front end, where they are going to release on tape and that's the end product, they get a lot of things from doing it this way. They get a better image quality in the final release, I believe. The problems of color correction can be overcome. We are working on processes now that would store color corrections for a particular group of scenes, so that they could be recalled and applied to subsequently received pieces of film that represented the same time of shooting, under the same lighting conditions. That can be done.

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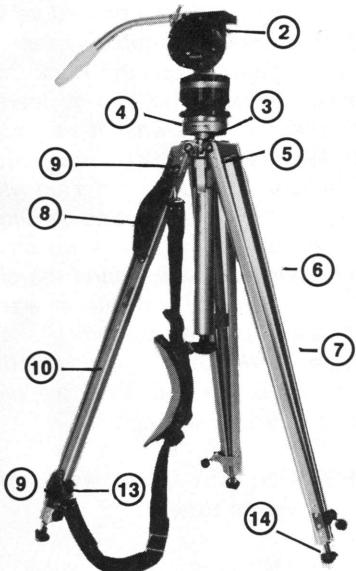
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it is being transferred—probably on the same day that they shot it—and the cinematographer can make corrections in his lighting for the following morning, if there's a problem. On this project we provided them with a 3/4-inch cassette of everything—something they could take back to the studio and show the actors and technical people.

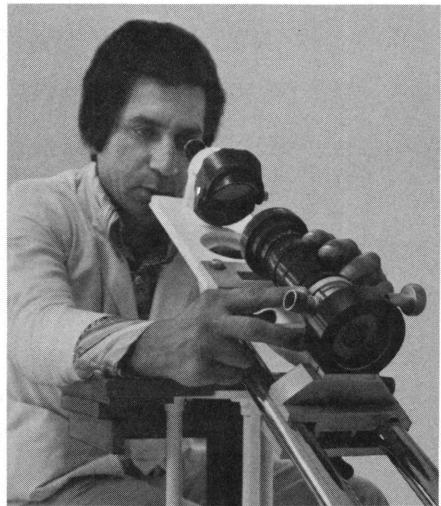
The basic technical procedures are there. For the immediate future I think it's a matter of taking the time to work with people who are willing to stumble their way through the procedure as it now exists. We don't profess to have an absolutely ironclad system at present, and if it were to be sold that way I think it would be a mistake. But we have something that's in the experimental stage and I feel comfortable with it from a technical standpoint—and I think the producers will feel comfortable with it as we go along.

QUESTION: There is a question that still bothers me—and it may still bother you, for that matter. We've talked about the problem of synching the sound track with the original picture negative for tape transfer. What do you think can be done to solve that problem?

THOMPSON: Our initial feeling is that the sound track, in some way, will have to be conformed to the negative and we have proposed a couple of different methods for doing this. One which I don't think is the right way to go might be an intermediate step which we will have to take and that is to make a very dirty print—black and white or whatever—from the negative and give this to a standard sound cutter and let him handle it as if he were working with a daily. That method obviously increases the cost of the whole system and it also kills us in what we think is the best advantage we have—that of time.

Ultimately we are going to have to come up with a system which permits us to handle the negative as one of the synching elements and this, of course, is a no-no in the industry today. We are working on that, but I have no answers for it right now. It gets exceptionally tricky when you are working with more than a single-camera operation. Single-camera is fairly easy, because you have everything in a kind of sequential order. You've got a picture that is running and you've got a sound tape that has the same things, and all you have to do is find the synch-up marks. That's not difficult, but when you have three or four or five cameras running with a common mag track then there is a problem. That mag track will have more things on it

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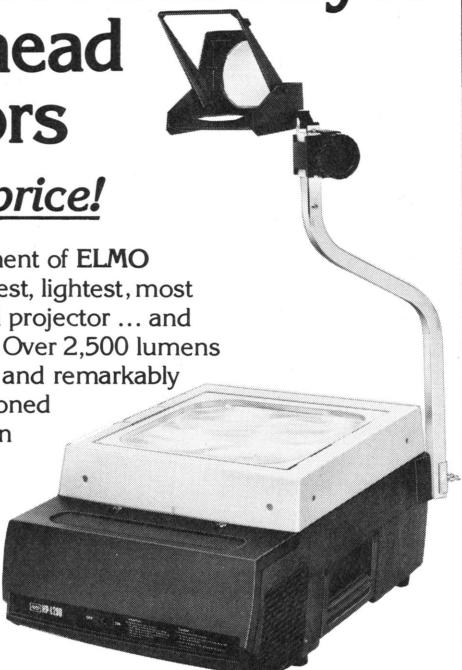
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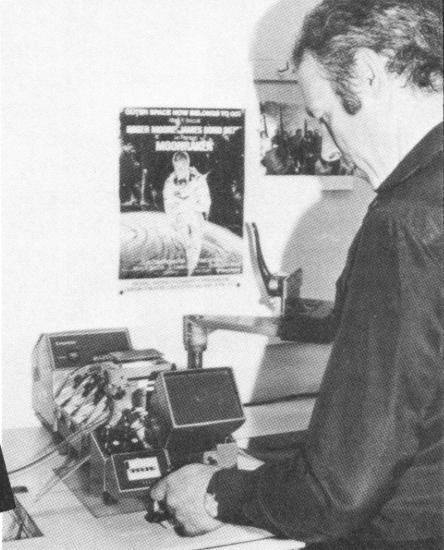
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than there are on each one of the pieces of film, because every camera does not necessarily roll for every scene. I would much rather have them hand me a set of negatives that have multiple versions of that mag track to correspond to those pieces of film.

QUESTION: Getting down to specifics on the *Lucille Ball* special, how did you cope with the problem?

THOMPSON: Well, we did sync the track to the negative and the procedure was really the simplest possible system. We put the negative up on the Rank Cintel machine, because we had no fears of hurting the negative while it was on the Rank. We had a log which corresponded to a camera log and we had a log which corresponded to the sound recording log. We put the mag track up on the dummy and physically found the clap-stick or the X-mark or whatever was on the film and the corresponding one on the tape, interlocked them and rolled off. When that scene was over, we did it again and again and again.

QUESTION: But there were some misses, weren't there?

THOMPSON: Very few, actually. What we would encounter occasionally was a paperwork flaw that recorded a mag track that didn't really exist and we would have to waste some time looking for it. At that point no one had paired the two up before, so we had no idea what was going on. It was more of a paperwork nightmare than anything else.

Referring back to the point that was raised about color correction in the tape editing—that isn't as time-consuming or as serious as it might seem to be. One of the advantages of doing this on tape is that you see the material in a real-time environment while you are assembling it. You can make color correction judgments on a scene that is being cut together with another scene as it is being done. The equipment is available to do the color correction at that time. So if you see a scene that does not fit—either because of density, color or whatever—you can stop, make the adjustments with a piece of electronic equipment that we have at our disposal, and then lay it in.

QUESTION: Which equipment would you use that would permit the kind of color correction you mentioned?

THOMPSON: There are a number of devices available and we use a modified version of a commercial piece of equipment. It started out as a manufactured product from Thompson-CSF, but we

have made some changes in it so that we can handle problems that have come up with film. It was basically built to handle discrepancies in original video tape electronic camerawork, but we've made some modifications to make it more suitable for the color correcting of film. This process is very simple. Any good video operator or telecine operator handles the system the same as he would at the original point of transfer.

QUESTION: Then, do I understand correctly that theoretically, at least, it is not necessary to go to an extra tape generation to make these fine-tuned corrections? You can do it at the time of actually making the cuts (even though it takes a bit more time), or you can come back later and do a corrected insert of whatever scene is off—but still staying with the same generation. Is that correct?

THOMPSON: Right.

QUESTION: (To John Koch) If you had this project to do over again, what would you want to change?

KOCH: The main thing would be the cataloging of the film. That was a nightmare—just trying to keep track of things. Certain scenes would be missing one day; the next day we would have them—but we wouldn't know they were coming the next day. Not having the overall picture when you start transferring sequences with missing scenes, trying to make sense out of all this mass of film that's dumped in your room—it's kind of hairy.

QUESTION: (To Gary Thompson) Any final thoughts on the subject?

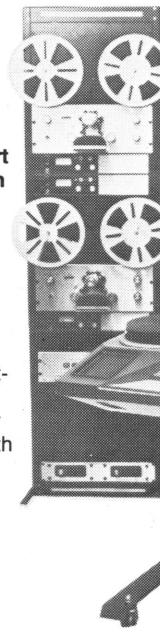
THOMPSON: I would think that what we've gone through is something that many film people will consider a kind of joke, because it is something that they do every day. They handle immense amounts of film and catalog it very efficiently, but this is something that we don't know about yet. We haven't really learned some of those procedures that have been used for years. When you are talking about 50,000 to 60,000 feet of 35mm film coming in—with 700 feet being about the biggest roll that we saw during the whole project—that's mind-boggling to us, because in the past we have been used to picking up 2,000 to 3,000 feet of film, putting it on the telecine and transferring it. I've been spending some time talking with film editors to find out how they do this. It's a procedural thing that just has to be worked out.

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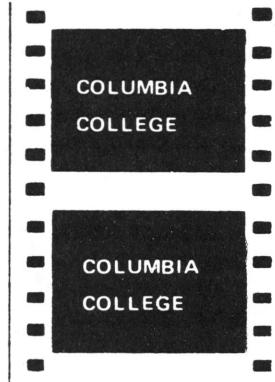
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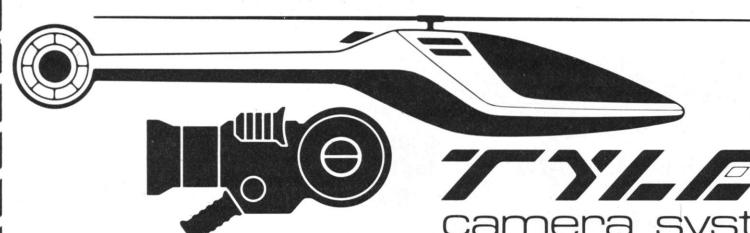
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FILMING IN PEOPLES REPUBLIC OF CHINA Continued from Page 345

asleep, but he couldn't wait. Sturholm put the CP-16A camera on the tripod. "I always use a tripod unless there is a good reason not to," he says. "The images are sharper, and there is much more depth of field."

Immense crowds gathered, staring and pointing at the camera and talking into his mike every time he set up. "Some of that was interesting, but after a while, I started to think I would never get establishing shots and film of people acting naturally," he says. "I wanted the people doing their exercises and hanging their clothes in the streets. Instead, I got masses of people every time I set up."

The crowds were even larger when he worked with Enersen. "She is blond and pretty," Sturholm says. "Every place we went, she was mobbed by people wanting to touch her hair and clothes." The photographer illustrated the problem and curiosity of the Chinese people with one stand-up where he filmed a mass of people surrounding Enersen. "If you think this is a lot of people, you should see Phil," she said, and pointed the Bell & Howell camera at Sturholm and the mob around him.

In another effective establishing shot, Sturholm managed to get a close-up of Enersen with the zoom at full extension, and then he slowly pulled back and revealed the mass of people behind her. Even though Sturholm, who is a sturdy six-footer, and his camera attracted his own crowds, he found he usually did better working alone.

Sometimes he would simply outleg a crowd by picking up the camera and racing at full speed ahead of the spectators, turning corners when he could. Then he would start shooting until another crowd enveloped him, usually in minutes.

Once in desperation he asked his interpreter if he would ask a traffic officer to allow him to shoot from the middle of an eight-lane highway. "I figured there would be no mob there," he says. Unfortunately, the crowd followed him to the middle of the street, and the accommodating officer stopped all the traffic to make room for them.

Sometimes the guide-interpreter assigned to Sturholm was helpful. At other times, the photographer was told he was on his own. "I asked the guide if I could film people at the so-called Wall of Democracy when we were in Peking," Sturholm says. "He told me I couldn't, but I could go by myself. That wasn't a surprise."

Another time he wanted to film people

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working in a field. He asked the guide to ask their permission. He told the photographer he would have to ask himself. That was a surprise.

There were other difficulties. While most people would stare and point at the camera, many simply refused to be filmed doing their work or other normal activities. Because Sturholm attracted attention wherever he went, it was difficult for him to be unobtrusive.

"I would try to make believe I was setting up to shoot in the opposite direction, and then suddenly spin around with the focus and f-stop preset," he recalls. "Usually the people I was trying to film were gone."

Often Sturholm had surprising freedom of movement. "I was able to go pretty much any place by arranging for a taxi," he says. "My only instructions were not to film military activities or soldiers."

The taxi drivers were generally accommodating. One drove him to the Great Wall. Another time, he told a driver he wanted to film in a street they were passing. He stopped in the middle of traffic and let Sturholm out. "Everything stopped around me," he says.

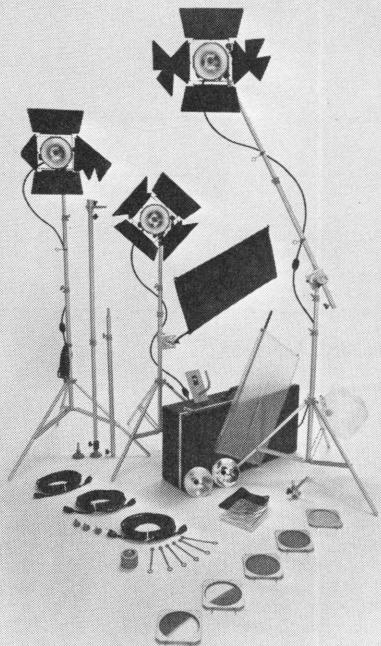
Officialdom, as in many countries, was less flexible. The first day in Shanghai, the TV crew was greeted by representatives of the local television station. "They were very friendly and wanted to take us on a tour of their station," Sturholm says. "We told them we would rather film where the ship was going to arrive, and on a commune. They were taken aback, and protested that would be impossible because no plans were made." As an alternative, Sturholm was able to join a harbor tour with the shipping delegation.

Natural sound was a particularly vexing problem. "I don't like a lot of narration, and we did very few interviews," Sturholm says. "I believe natural sound should help carry stories." Frequently, KING-TV news stories begin with a five-second natural sound bite.

This was next to impossible in China, because people would persistently speak into the mikes whether they were mounted on the camera or strung out away from it. "I tried every trick I had ever learned working alone," Sturholm says, "and very little worked." Finally, he began using routinely the small Sony cassette recorder for wild sound. Later, during postproduction, all the sound and narration were transferred to fullcoat for editing.

The only time artificial illumination was used was during prearranged interviews with U.S. Ambassador Leonard Woodcock and officials of the shipping company. "We had enough problems with crowds without advertising," he says.

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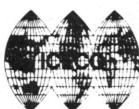
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"Also, most buildings were poorly lit with most of the illumination coming from windows. It would have taken a heck of a lot of tungsten illumination to light properly indoors anyhow," he adds.

Under normal circumstances, the available light was dim. "There was smog every place we went," he says, "apparently from the heavy use of coal, charcoal and wood for fuel." Exposing the 7240 film as recommended, he was usually shooting at f/5.6 or f/8 at the height of day. Sturholm usually was a stop or two under that earlier and later.

"In some situations, I pushed the 7240 film one or two stops with no problems," he says. "Ordinarily, I try not to push, because you can change the mood of a story by affecting the quality of light."

In all, he exposed some 15,000 feet of film. This included all of the 7240, both in 400- and 100-foot rolls, and about half of the 7250 film. Getting the exposed film out of China presented another interesting challenge. "We were told arrangements had to be made to ship news film out 72 hours in advance," Sturholm says.

"I knew the station wanted to run some of the stories while we were in China, so I looked for a shortcut to avoid the three-day delay," he says.

It was easy. Sturholm recruited five people whom he met at hotels to carry film when they returned to the United States.

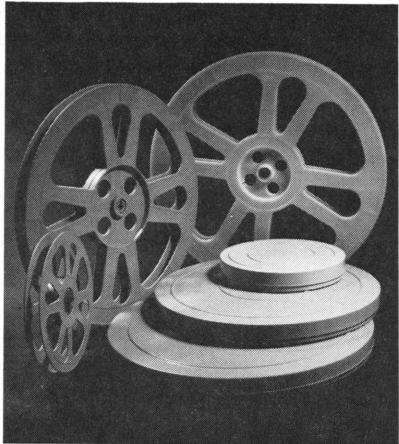
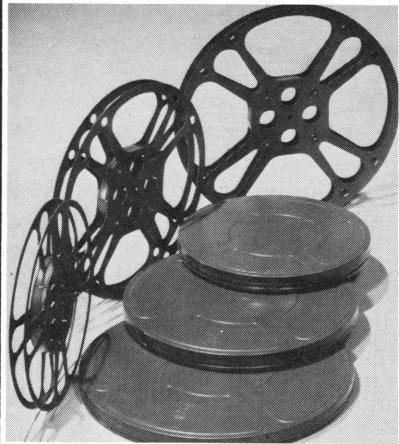
The rest of the film traveled with him. The final and, in some ways, most nerve-racking challenge was getting out with his gear and film intact. His last stop was in Canton where the journey into China had started. When he disembarked from the plane, Sturholm found neither his gear nor his guide were there. "I was frantic," he admits. "I couldn't find anyone who understood enough English to help."

Finally, he noticed a group of Australians who had an English-speaking guide. However, when Sturholm explained his problem, the interpreter at first refused to help. Finally, he convinced the man to at least telephone the travel bureau and ask them to send someone with whom he could speak.

The new interpreter found out the gear hadn't been shipped, because there wasn't room on the airplane. He said it would be on the next flight. When it wasn't, he said it would surely arrive the next day. "All kinds of possible disasters went through my mind," Sturholm says.

The next day Sturholm was told his gear had been shipped directly to Hong Kong. But when he got there by train, he found it was sent back to China because he hadn't been there to receive it. "I was told I had to pay another fee for it to be sent again," he says. "I agreed to pay, but

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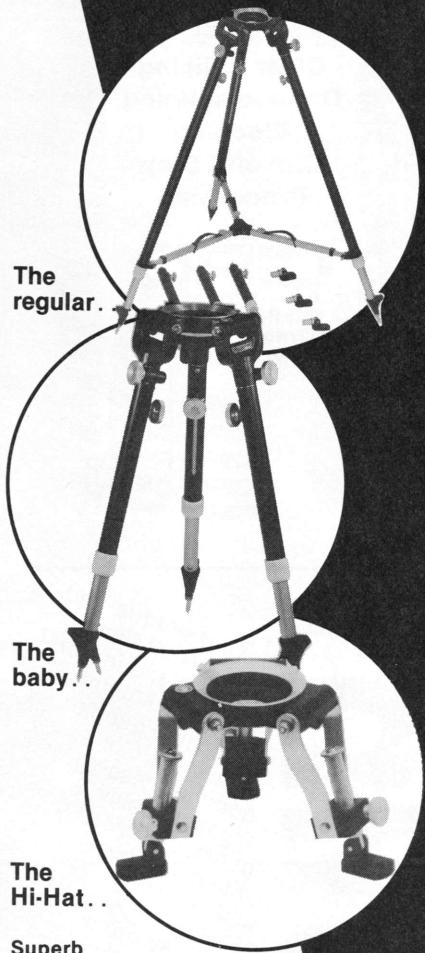
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not until everything arrived. By then, I was only a little short of frantic."

But the story has a happy ending. The gear and the film finally arrived, the stories have run, and the special aired in July.

In retrospect, what would Sturholm do differently if he was going back again?

"I would carry 5.7mm super-speed lenses and 300mm telephoto lenses," he answers first.

He said that the wide angle would have allowed him to follow the correspondent closely and do short takes over her shoulder. That would have avoided some of the crowd problems. The long lens would have allowed him to poke past the crowds.

Though he prefers working alone in Seattle, a sound technician would be welcome on a second trip to China, Sturholm adds. "That would have greatly improved our chance of getting natural sound, since we would be able to get the mike away from the camera. As an alternative, I would carry a good shotgun mike so I could aim away from bystanders. It would also help a lot to have someone who could help haul gear when necessary."

Other considerations would include more carefully planning of his itinerary, making all of the necessary arrangements, and carrying sufficient cash and traveler's checks. "Most of the bigger hotels will cash some traveler's checks," he says. "It wasn't necessary for me to carry a travel bag of money, though you do need enough currency to pay for all your expenses at any given time. You can't charge an air ticket or pay a taxi driver with a traveler's check."

Was it all worth it?

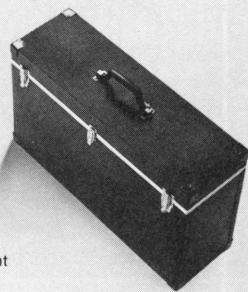
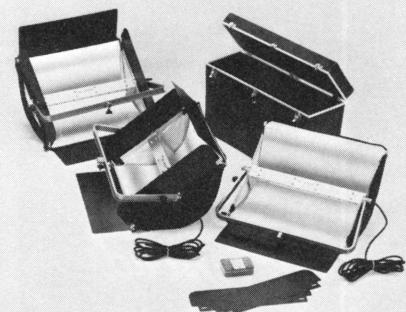
"You bet it was," Sturholm replies. "I wouldn't trade the experience for anything—well, almost anything," he adds. "It was also very exciting hearing we were selected as NPPA TV News Photography Station of the Year. That is something I wouldn't trade for anything."

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"WORLD OF WIZARDS" Continued from Page 383

viewpoint. All was going well, and it wouldn't be too much longer, from the audience's point of view, before our escapist was unwound, unmasked, and swung back onto dry land, where we would reveal him to be our WORLD OF WIZARDS host, James "The Amazing" Randi. Seemingly calmer than the rest of us, Randi knew it was a calculated non-risk, while we could only see the danger in the stunt, a feat he had pulled off many times before, although never while hanging over any location as spectacular as Niagara Falls. While I watched him hanging like a spider, through my quickly misting-up eyepiece, I still had time to reflect on how we had ended up here . . .

Randi was the perfect host for the WORLD OF WIZARDS. A Merlin-esque, almost comic book type magical character, with salty white hair and beard, red cloak, and knowledge of the many forms of magic we wished to explore, he seemed to sum up the consummate image for a guide on our magical tour. From the moment we shot the opening sequence to the film in Randi's castle-like backyard in New Jersey, where he walks out of a smoke-pot rimmed in moonlight to introduce himself and the film, his larger-than-life character seemed well established. Here was the Kenneth Clark of mysteries. We were careful throughout the film to choose backgrounds, angles and lighting that would continually enhance this image. One seldom gets the opportunity to shoot a host as a character, but with a magic film, I could pull out all the stops. Randi was shot from every angle—walking into extreme high and low angle shots, looming out of mysterious fogs, or peering into a glowing crystal ball. I worked the whole repertoire of lighting and camera gimmicks.

We had decided from the beginning that we were not going to make the kind of film that would be referred to strictly as a documentary on magic. We did want the real and explorative nature of a documentary, but combined with the entertainment aspects of a variety show, in order to give us the sympathetic yet exciting view on magic which we wished to project. Hence the word "Docutainment",

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coined by Insight's Producer and Director team of John Watson and Pen Densham, which seems an original way to describe the style of presentation that Insight Productions endeavors to bring to all their shows.

Since Insight was established in Toronto, Canada in 1970, I have enjoyed a continuous affiliation with its producers as a freelance cameraman, and have always appreciated the extra effort and care they put into their films, such as the Oscar nominated *LIFE TIMES NINE* (written up in *American Cinematographer*, 1974), and their much applauded dramatic effort *IF WISHES WERE HORSES*, winner of thirteen awards in all, including Special Jury Award from the San Francisco Film Festival. The most recent film we collaborated on was *STALLONE: THE MILLION TO ONE SHOT*, another docudrama type film, featuring a candid study of the hero of *ROCKY*, Sylvester Stallone. Since most of the shooting took place on the set of the feature film, *F.I.S.T.*, I was afforded the pleasure of meeting, and being able to observe at work, one of my favorite Directors of Photography, Lazlo Kovaks, ASC.

In the WORLD OF WIZARDS, Randi hosted us through an extensive tour of North America's magical spots, including Flosso's Magic Store in New York City, one of the oldest magic shops in America, where kids buy their first trick and start on their way to Broadway—not the stage, but the street, where we captured, in a hand-held style, the exploits of a genuine street magician, Bill McQueen. From there, it was on to the eerie site of Houdini's grave, replete with an awesome bust of the magician's magician, scowling down on those who visited his mortal remains.

Most of the shooting of our actual magic acts took place on the stage of a delightful magician's club in Los Angeles, the Magic Castle. We paid particular attention to selecting the correct background and lighting to best communicate the specific feeling of each individual act, and we were very aware of sustaining a suspense and belief in the magician's abilities. We always covered the performer in such a way as to convince the audience that the magic was his—not the camera's, but we didn't sacrifice impact. For instance, for a lady being sawed in half, I closed off the back of the viewfinder and shot hand-held with the camera at arm's length, utilizing the zero focus capability of the 5.7mm wide angle lens to give a quick moving, scary feeling, and was able to poke the audience's nose into the sawblade as it ripped into our ingenue. We also shot the act a second time in order to do a master

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wide shot that could be cut into the 5.7mm shot. For an executioner's mood, I made the lighting harsh with lots of back light, whereas, for our sequence on fire-eating with Goldfinger and his sensuous partner, Dove, the shots were much more controlled and set up, breaking the act down into little sequences to be reassembled in the editing with lots of dissolves, to give it a smooth, choreographed feeling. Side lit with low-powered amber-gelled lights, and performed to the rhythms of disco music, the flames took on a life of their own, contributing a robust, flickering, natural strobe light to the event.

While shooting documentary style coverage of the interior of the Magic Castle itself, having been inspired by the eerie feeling of its paintings with moving eyes, I decided to hand swing our lights during shots of various statues and magic artifacts, giving them a strange, living, multi-dimensional quality.

Our biggest dilemma graphically was to prevent the "Docu" aspect of the show from bogging down the "tainment" when we did on-camera interviews. One interesting case occurred when we managed to catch up with the star of the New York City Magic Show, Doug Henning, while he was rehearsing one of his own TV magic specials in Los Angeles. Time ran away with Doug, and when he was finally available to be filmed, the sun was setting rapidly. Our director, Pen Densham, had decided to shoot at the nearby Pacific coast beach, so this was a case of necessity becoming, photographically, a mother of invention. With an inspiration, we shot almost the entire sequence with Doug Henning's silhouette against the Pacific Ocean sunset. The result was a profile interview against an orange-blue dusk; a most satisfying and magical atmosphere.

We had two other major locations for WORLD OF WIZARDS, one being Colon, Michigan (population: 1,500), considered to be the home of magic in America, and the location of an annual convention for the exponents of the art, where 1,500 magicians gather to baffle one another for a week at chaos. The other site was that of the Houdini Museum in Niagara Falls, Canada, where we filmed the Fiftieth Anniversary Séance—an attempt by friends and devotees of Harry's to prove that he could make one final escape from beyond the grave. On this occasion, we were permitted to orchestrate this public séance for our own needs and we made it suitably ghostly with orange backlights, and the inclusion of many of Houdini's personal artifacts on a circular mirrored table around which we seated our ghost hunters. The mirror table expanded our photographic possibilities

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immensely, giving us all manner of angles, but did not soften the effect when Houdini refused to come back from the land of the dead.

The final chapter for completion of the program was to capture an event on film that had never before been seen. Randi's perilous escape, intercut with suitably scary footage produced by a camera suspended from a crane and swung over the falls, provided the climax we needed.

It took a full two years for Insight Productions to research, shoot, and assemble their sixty-minute film, *WORLD OF WIZARDS*, and a half-hour version narrated by Burgess Meredith entitled *HOUDINI NEVER DIED* . . . (He just vanished!). It was worth it; no one has ever produced anything like these films, which pay a great tribute to the magical spirit that inspired the likes of Dante, Blackstone, and Houdini . . . and appeal to that gentle sense of wonder which still exists today within us all, despite the transistor. ■

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Winning an Oscar is as much fun as it looks, Academy Award-winning Cinematographer Ernest Laszlo told a group of University of Florida film students recently.

Laszlo was on the University of Florida campus in Gainesville as part of a Visiting Artist Program made possible by a grant from the Academy of Motion Picture Arts and Sciences. This program brings noted members of the Academy into personal contact with cinema students around the country.

Laszlo spoke to 150 Florida film students about his career as a Director of Photography and the difficulties he's encountered in filming certain pictures.

When asked if winning an Academy Award is as much fun as it looks, Laszlo evoked laughter with a straight-forward answer: "Of course."

Of special interest to the students were his comments on the job situation in the film industry. "A great deal of talent is required because of the stiff competition in the business," Laszlo said, adding that experience also is important. "Experience is what makes a professional. You can look at something and build on past experience. I always remember old shots and that makes my new shots better."

Experience is something Laszlo knows about. He has made over 55 feature pictures, been nominated for eight Academy Awards and won an Oscar for *SHIP OF FOOLS*. That picture was shown to the Florida film students the night before Laszlo's lecture.

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SHOOTING "THE SCHEDULE MASTERS" WITH WESSCAM

Continued from Page 373

available shooting hours provided little room for problems with equipment. To be sure, the Wesscam system was our most technically sophisticated production tool, and like any other item of complex electronic gear it can be obstinate at times. In one instance, for example, we developed a mysterious power surge that would cause sudden loss of control of the platform. The camera would tilt straight up, the lens would zoom out and the iris would open fully. Ron traced the problem to some electrical cross-talk between the Alouette's generator and the Wesscam power supply, made a fix and got us rolling again. I credit his thorough knowledge of his equipment in minimizing downtime throughout the shoot.

Far more threatening to our schedule were problems in obtaining permits for aerial shooting, particularly in Germany. A couple of recent cases there involving helicopters and terrorists posing as film or TV crews have made things difficult for legitimate production people. There's simply no shortcut in getting the required permissions . . . at all levels of government it takes time no matter how much clout you might think you have. We had been alerted to this situation early in our planning and had a two-month head start with two German production managers at work. Even so, final permits often arrived only a day or so before shooting in a certain area was scheduled due to some last-minute technicality.

Luftwaffe jets buzzing nearby on low-level training missions, police roaring up with holsters open to check out terrorist reports, village mayors asking us to post signs warning housewives to take in their laundry so it wouldn't be soiled by flying dust. It was all part of getting THE SCHEDULE MASTERS done. We even had an afternoon of flyovers by a camera crew in a light plane, probably hired by one of Deere's competitors. But somehow we managed to leave our final location in Spain on time and on budget.

It took ten weeks of post-production to get the film into release in English and eight foreign languages. David Howard handled editorial work in our St. Louis office, providing a luxurious and well-paced cut for composer Robert Wykes' original symphonic score, recorded in London. Looking at the show in its final form, I'm reminded that Wesscam aerials simply don't feel like aerials. With the system's superior stability, the very difficult seems effortless and under complete control. You're not subconsciously on edge, waiting for the next subtle bump or glitch . . . the next enforced cut or dis-



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solve that's there only to save a shot from embarrassment. It's an excellent example of camera as best possible observer, but never actor . . . technique doesn't invade storyline. I think our viewers will want to know more about the John Deere machines and, hopefully, very little or nothing about how the film was shot.

Did we use Wesscam capabilities to the fullest? I'm not sure what the outer limit would be. When I spoke to Ron recently, he told me he had just perfected a way to shoot as low as one frame every two seconds at a one-second exposure with absolute in-flight stability. Obviously we didn't need that kind of "light speed" effect in our show. I have to evaluate the system more on how well it did the specific jobs we asked it to do, whether complicated or comparatively straightforward. In that respect, Wesscam delivered all we had hoped for and more. We gave our audience a point-of-view they'd never had before . . . I think that's what most directors try to do in blending mechanics and story, and it's liberating when you find equipment that gives you complete creative freedom rather than pulling you around by the nose with limitations. We could not have made THE SCHEDULE MASTERS as well in any other way. ■

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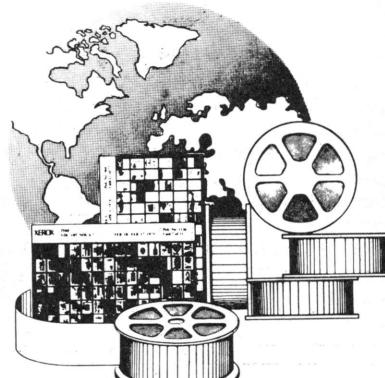
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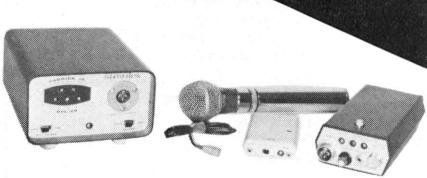
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(ABOUT THE AUTHORS: Burum is a 39-year-old cinematographer who recently worked on two of the most prestigious feature films of the year. He served as director of second unit photography on *APOCALYPSE NOW* and *THE BLACK STALLION*. Horvitz is a young director who is a veteran at directing television variety shows featuring rock performers, and has directed many installments of "Don Kirshner's Rock Concert". With Horvitz as director and Burum as Director of Photography, they worked together filming a Bee Gees' concert in Oakland used in an NBC special last November. Other footage not shown in the special will comprise an upcoming feature film of the concert.)

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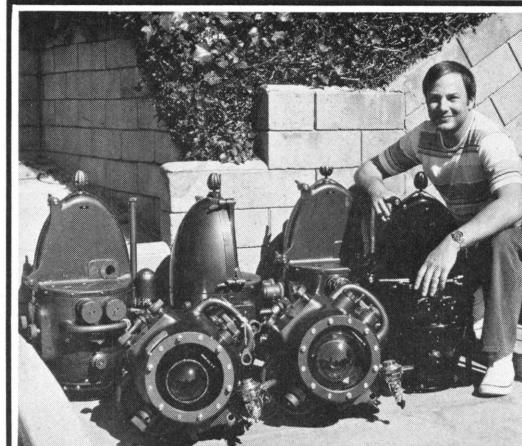
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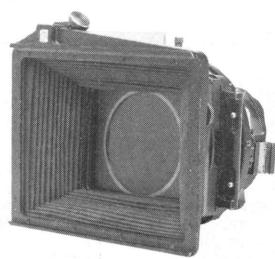
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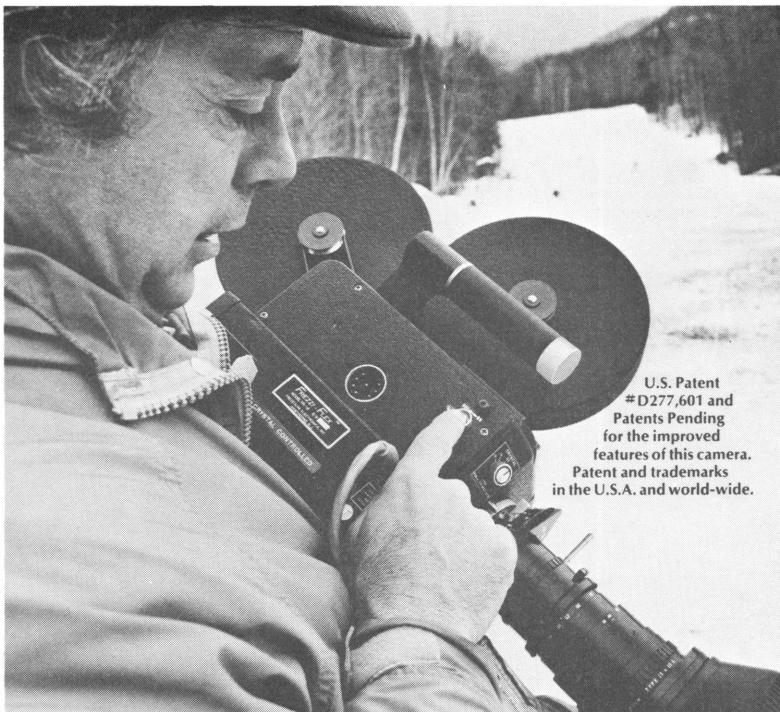
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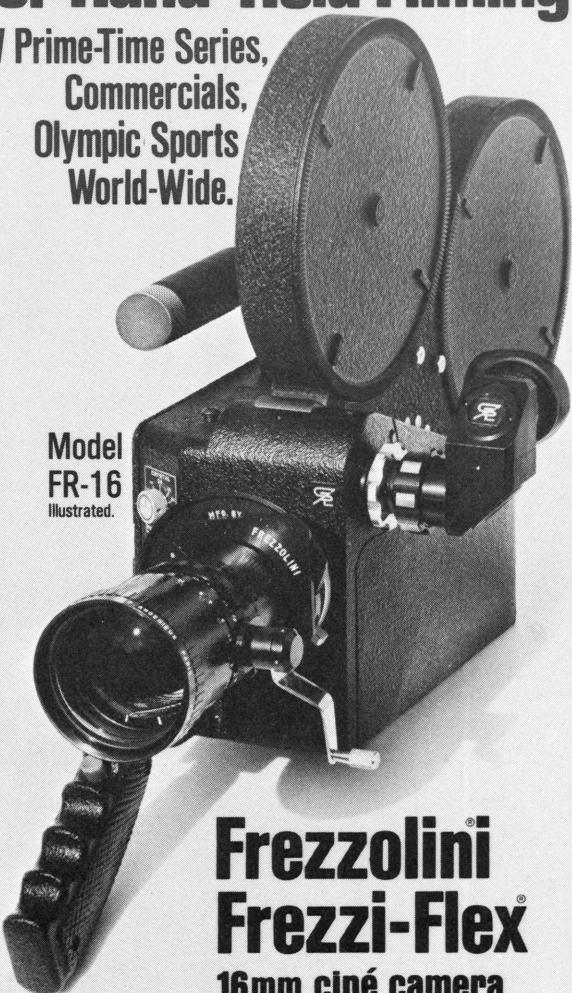
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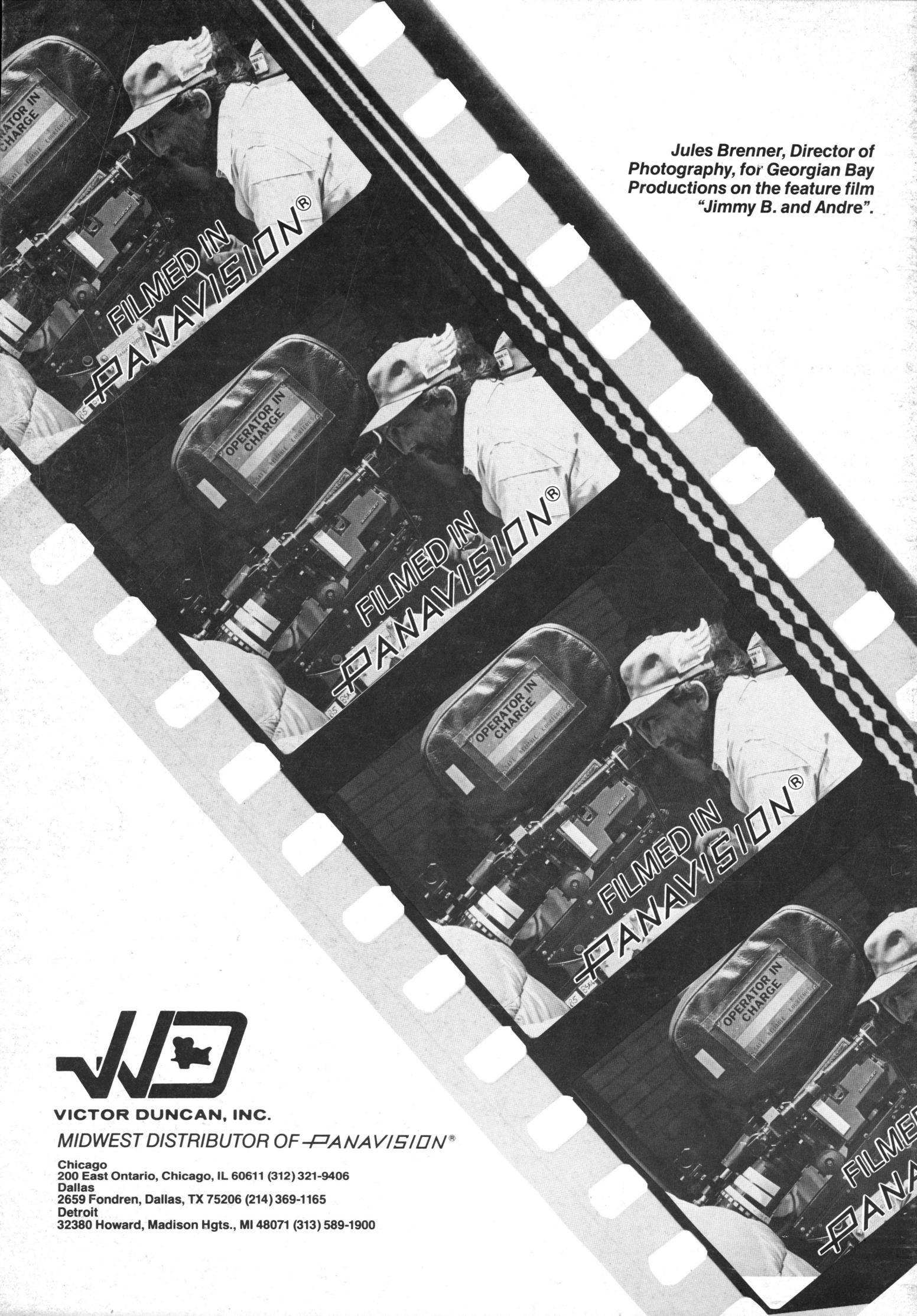
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